SERVICE MANUAL

W860CU / W870CU

Notebook Computer

W860CU/W870CU

Service Manual

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About this Manual

This manual is intended for service personnel who have completed sufficient training to undertake the maintenance and inspection of personal computers.

It is organized to allow you to look up basic information for servicing and/or upgrading components of the ***W860CU/ W870CU*** series notebook PC.

The following information is included:

Chapter 1, Introduction, provides general information about the location of system elements and their specifications.
Chapter 2, Disassembly, provides step-by-step instructions for disassembling parts and subsystems and how to upgrade elements of the system.

Appendix A, Part Lists
Appendix B, Schematic Diagrams

IMPORTANT SAFETY INSTRUCTIONS

Follow basic safety precautions, including those listed below, to reduce the risk of fire, electric shock and injury to persons when using any electrical equipment:

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit with an AC Input of 100 - 240V, 50 - 60Hz, DC Output of 20V, 6A OR 19V, 6.3A OR 18.5V, 6.5A (**120** Watts) minimum AC/DC Adapter.

CAUTION

Always disconnect all telephone lines from the wall outlet before servicing or disassembling this equipment.

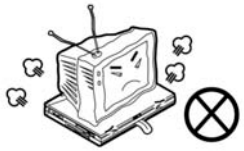
TO REDUCE THE RISK OF FIRE, USE ONLY NO. 26 AWG OR LARGER, TELECOMMUNICATION LINE CORD

This Computer's Optical Device is a Laser Class 1 Product

Instructions for Care and Operation

The notebook computer is quite rugged, but it can be damaged. To prevent this, follow these suggestions:

1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.

Do not expose the computer to any shock or vibration.	*Do not place it on an unstable surface.*	*Do not place anything heavy on the computer.*
		

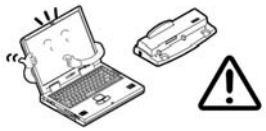
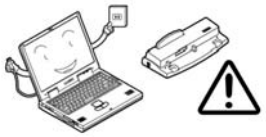
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.

Do not expose it to excessive heat or direct sunlight.	*Do not leave it in a place where foreign matter or moisture may affect the system.*	*Don't use or store the computer in a humid environment.*	*Do not place the computer on any surface which will block the vents.*

3. **Follow the proper working procedures for the computer**. Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.

Do not turn off the power until you properly shut down all programs.	*Do not turn off any peripheral devices when the computer is on.*	*Do not disassemble the computer by yourself.*	*Perform routine maintenance on your computer.*

4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices**.

Use only approved brands of peripherals.	*Unplug the power cord before attaching peripheral devices.*
	

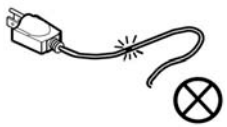
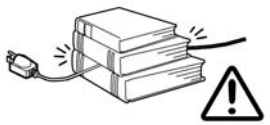
Power Safety

The computer has specific power requirements:

- Only use a power adapter approved for use with this computer.
- Your AC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies.

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Do not plug in the power cord if you are wet.	*Do not use the power cord if it is broken.*	*Do not place heavy objects on the power cord.*
		

Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not continue to use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.

Battery Guidelines

The following can also apply to any backup batteries you may have.

- If you do not use the battery for an extended period, then remove the battery from the computer for storage.
- Before removing the battery for storage charge it to 60% - 70%.
- Check stored batteries at least every 3 months and charge them to 60% - 70%.

Battery Disposal

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Caution

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Battery Level

Click the battery icon in the taskbar to see the current battery level and charge status. A battery that drops below a level of 10% will not allow the computer to boot up. Make sure that any battery that drops below 10% is recharged within one week.

Related Documents

You may also need to consult the following manual for additional information:

User's Manual on Disc
This describes the notebook PC's features and the procedures for operating the computer and its ROM-based setup program. It also describes the installation and operation of the utility programs provided with the notebook PC.

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Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the ***W860CU/W870CU*** series notebook computer. Information about operating the computer (e.g. getting started, and the *Setup* utility) is in the *User's Manual*. Information about drivers (e.g. VGA & audio) is also found in *User's Manual*. That manual is shipped with the computer.

Operating systems (e.g. *Windows Vista, Windows 7,* etc.) have their own manuals as do application software (e.g. word processing and database programs). If you have questions about those programs, you should consult those manuals.

The ***W860CU/W870CU*** series notebook is designed to be upgradeable. See ***Disassembly on page 2 - 1*** for a detailed description of the upgrade procedures for each specific component. Please note the warning and safety information indicated by the " " symbol.

The balance of this chapter reviews the computer's technical specifications and features.

System Specifications

Processor

Intel® Core i7-820QM Processor: 1.73GHz
45nm (45 Nanometer) Process Technology, 8M L3 Cache &
FSB 1333MHz - TDP 45W
rPGA988A Package

Intel® Core i7-720QM Processor: 1.6GHz
45nm (45 Nanometer) Process Technology, 6M L3 Cache &
FSB 1333MHz - TDP 45W
rPGA988A Package

For W870CU Only:
Intel® Core i7-920XM Processor: 2.00GHz
45nm (45 Nanometer) Process Technology, 8M L3 Cache & FSB 1333MHz - TDP 55W
rPGA988A Package

Core Logic

Intel® PM55 Chipset

Display

W860CU
15.6” HD (1366 * 768) / HD+(1600 * 900) / FHD (1920 * 1080) 16:9 Wide Screen LED Panel

W870CU
17.3” HD+(1600 * 900) / FHD (1920 * 1080) 16:9 Wide Screen LED Backlit Panel

Memory

Two 64-bit Wide **DDRIII (DDR3)** Data Channels
Two 204 Pin SO-DIMM Sockets Supporting **DDRIII (DDR3)** 1333MHz
Memory Expandable up to **4GB** Using 2GB DDRIII Modules

Video Adapter

For W860CU & W870CU Computers:
nVIDIA® GeForce GTX 280M PCIe * 16 Video Card
1GB GDDR3 Video RAM on board
Supports Microsoft DirectX® 10
Supports HDCP

For W860CU only:
nVIDIA® GeForce GTX 260M PCIe * 16 Video Card
1GB GDDR3 Video RAM on board
Supports Microsoft DirectX® 10
Supports HDCP

BIOS

One 32Mb SPI Flash ROM
Phoenix™ BIOS

Keyboard & Pointing Device

Full Size WinKey Keyboard
Built-in TouchPad with Multi Gesture Function
Three Instant Keys (WWW, E-Mail, Silent Mode)

Storage

One Changeable 12.7mm(h) Optical Device (CD/DVD) Type Drive (see ***Factory Options for All Models on page 1-3***)
For W860CU
Easy Changeable 2.5" 9.5 mm (h) **SATA** (Serial) HDD
For W870CU
Easy Changeable 2.5" 9.5 mm (h) **SATA** (Serial) HDD (RAID 0/1 Support)

Card Reader

Embedded 7-in-1 Card Reader (MS/ MS Pro/ SD/ Mini SD/ MMC/ RS MMC/ MS Duo) **Note:** MS Duo/ Mini SD/ RS MMC Cards require a PC adapter

Slots

One ExpressCard/34/54 Slot
Two Mini-Card Slots (USB/PCIe):
Slot 1 for Half Mini-Card WLAN Module with PCIe Interface (**Factory Option**)

For W860CU
Slot 2 for UMTS/HSPA 3.75G Module with USB Interface (**Factory Option**)

For W870CU
Slot 2 for TV Tuner Card with USB Interface (**Factory Option**)

Security

Security (Kensington® Type) Lock Slot
BIOS Password
Fingerprint Reader Module (**Factory Option**)

Audio

High Definition Audio Compliant Interface
3D Stereo Enhanced Sound System
S/PDIF Digital Output
Built-In Microphone

For W860CU

2 * Built-In Speakers

For W870CU

5 * Built-In Speakers (Supporting 2 Channel Stereo)

Interface

Four USB 2.0 Ports
One eSATA Port
One IEEE1394a Port
One DVI-I Out Port
One HDMI Out Port
One Headphone-Out Jack
One Microphone-In Jack
One S/PDIF-Out Jack
One Line-In Jack
One RJ-11 Jack
One RJ-45 LAN Jack
One DC-In Jack

For W870CU

Note: External 5.1CH Audio Output Supported by Headphone, Microphone and Line-In Jacks

Operating System

Windows® Vista (with Service Pack 2)
Windows® 7

Communication

Built-In 56K Fax Modem V.90 & V.92 Compliant

Built-In 10/100/1000Mb Base-TX Ethernet LAN

Intel® WiFi Link Wireless LAN Module 5300 3*3 802.11 a/g/n Half Mini-Card with PCIe Interface (**Factory Option**)

3rd Party 802.11b/g/n Half Mini-Card Wireless LAN Module with PCIe Interface (**Factory Option**)

Bluetooth 2.1 + EDR (Enhanced Data Rate) Module with USB Interface (**Factory Option**)

2.0M Pixel USB PC Camera Module with USB Interface (**Factory Option**)

For W860CU Only:

UMTS/HSPDA-based 3.75G Module with USB Mini-Card Interface (**Factory Option**)
Quad-band GSM/GPRS (850 MHz, 900 MHz, 1800 MHz, 1900 MHz)
UMTS WCDMA FDD (2100 MHz)
Note that UMTS modes CAN NOT be used in North America.

Power Management

Supports Wake on LAN
Supports Wake on USB
Supports Resume From Modem Ring

Power

Full Range AC/DC Adapter
AC input 100 - 240V, 50 - 60Hz,
DC Output 20V, 6.0A OR 19V, 6.3A OR 18.5V, 6.5A
Removable Polymer Smart Lithium-Ion Battery Pack, 42.18WH

Environmental Spec

Temperature
Operating: 5°C - 35°C
Non-Operating: -20°C - 60°C
Relative Humidity
Operating: 20% - 80%
Non-Operating: 10% - 90%

Dimensions & Weight

W860CU

374mm (w) * 263.5mm (d) * 42mm (h)
3.3kg +/- 0.1kg With ODD & Battery

W870CU

412mm (w) * 279mm (d) * 39-48mm (h)
4kg With ODD & Battery

Factory Options As Per Model

For W860CU Only:

UMTS/HSPDA-based 3.75G Module with USB Mini-Card Interface

For W870CU Only:

Hybrid TV Tuner Card with USB Interface

Factory Options for All Models

Super Multi Drive ODD Module
Blu-Ray ODD Module

Intel® WiFi Link Wireless LAN Module 5300 3*3 802.11 a/g/n Half Mini-Card with PCIe Interface

3rd Party 802.11b/g/n Half Mini-Card Wireless LAN Module with PCIe Interface

Bluetooth 2.1 + EDR (Enhanced Data Rate) Module

Fingerprint Reader Module

2.0M Pixel USB PC Camera Module

External Locator - Top View with LCD Panel Open

Figure 1
Top View

1. Optional Built-In PC Camera
2. LCD
3. Power Button
4. Speakers
5. LED Hot Key Buttons
6. LED Status Indicators
7. Keyboard
8. Built-In Microphone
9. Touchpad & Buttons

W860CU

W870CU

External Locator - Front & Right side Views

Figure 2
Front Views

1. LED Power Indicators
2. Consumer Infrared Transceiver (for Optional TV Tuner)

Figure 3
Right Side Views

1. Headphone-Out Jack
2. Microphone-In Jack
3. Line-In Jack
4. S/PDIF-Out Jack
5. USB 2.0 Port
6. ExpressCard Slot
7. e-SATA Port
8. DVI-Out Port
9. Security (Kensington) Lock Slot (**W870CU** Only)
10. Power Button (**W860CU** Only)

External Locator - Left Side & Rear View

Figure 4
Left Side View

1. RJ-11 Modem Jack
2. USB 2.0 Port
3. Mini-IEEE 1394 Port
4. 7-in-1 Card Reader
5. Optical Device Drive Bay (for DVD Device)
6. Cable (CATV) Antenna Jack*

*Enabled with **Optional** TV Tuner Only

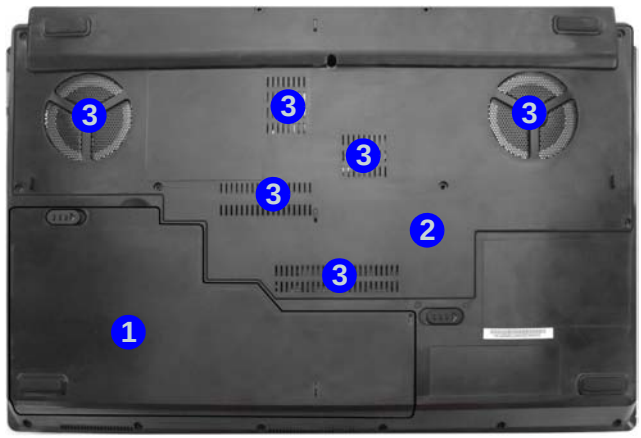
Figure 5
Rear View

1. Vent/Fan Intake/ Outlet
2. Security Lock Slot (**W860CU** Only)
3. HDMI-Out Port
4. DC-In Jack
5. 2 * USB Ports
6. RJ-45 LAN Jack
7. Rear Cover (**W870CU** Only)

External Locator - Bottom View

Figure 6
Bottom View

1. Battery
2. Component Bay Cover
3. Vent/Fan Intake/ Outlet
4. Speaker



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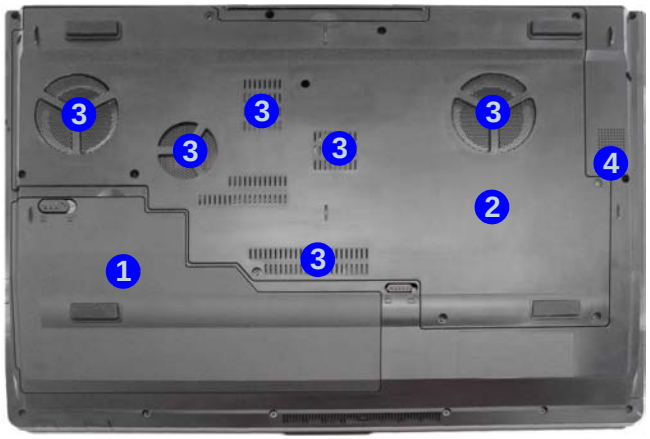

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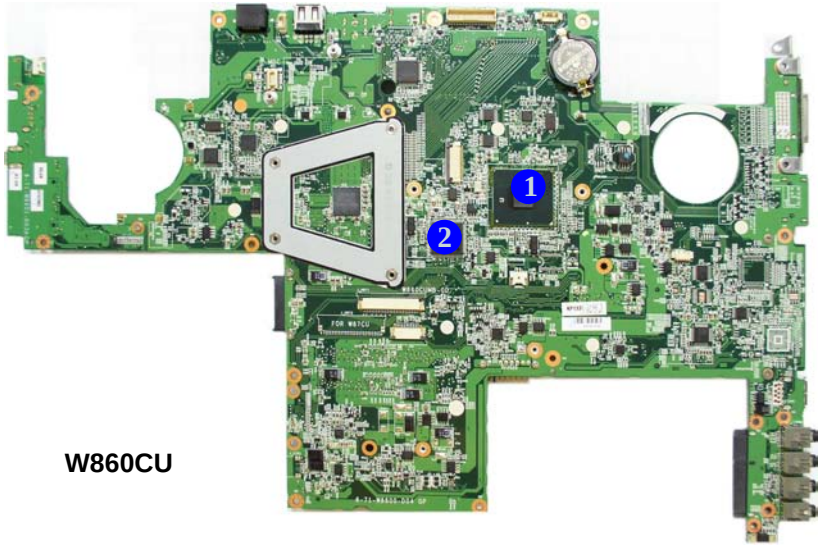
Overheating

To prevent your computer from overheating make sure nothing blocks the vent/fan intakes while the computer is in use.

Mainboard Overview - Top (Key Parts)

Figure 7
Mainboard Top Key Parts

1. South Bridge
2. KBC ITE IT8502E



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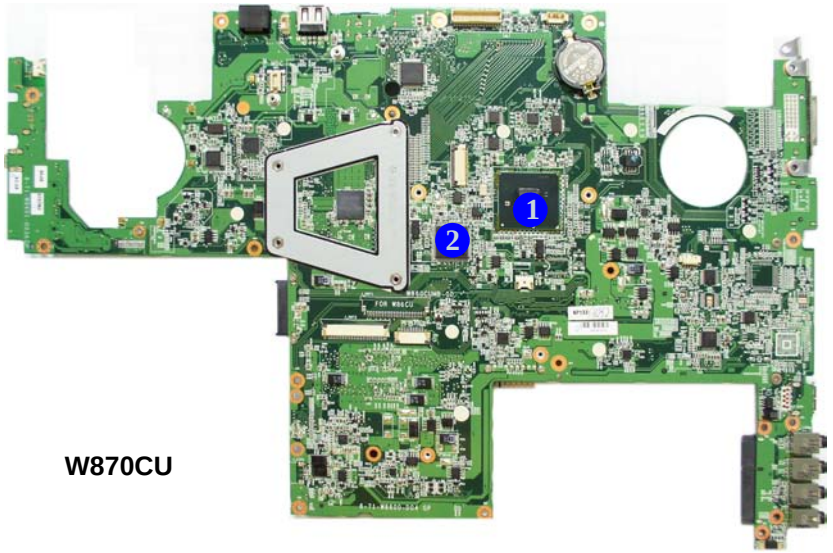

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Mainboard Overview - Bottom (Key Parts)

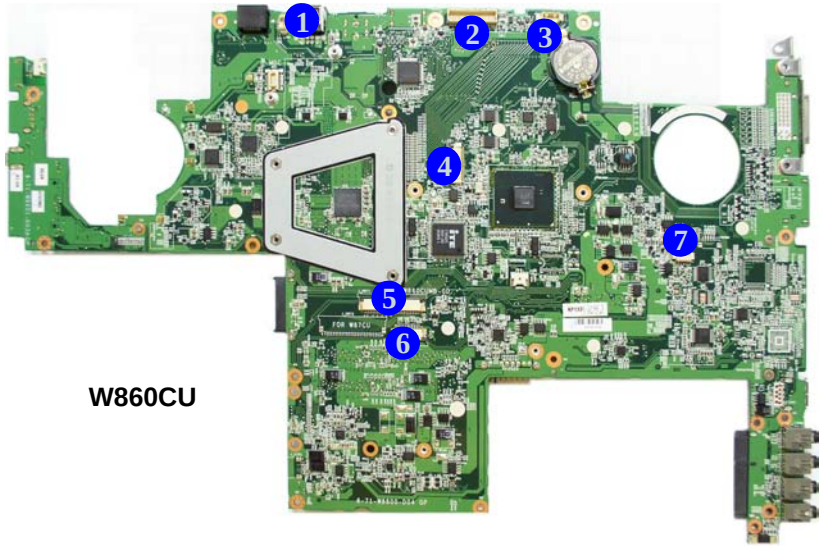
Figure 8
Mainboard Bottom Key Parts

1. CPU Socket (no CPU installed)
2. Card Reader Socket
3. Memory Slots DDR3 SO-DIMM
4. Mini-Card Connector (3G Module for W860CU and TV Module for W870CU)
5. Mini-Card Connector (WLAN Module)
6. ExpressCard Connector
7. VGA-Card Connector

Mainboard Overview - Top (Connectors)

Figure 9
Mainboard Top Connectors

1. USB Port
2. LCD Cable Connector
3. CCD Connector
4. Hotkey & LED Connector
5. Keyboard Cable Connector
6. TouchPad Cable Connector
7. Speaker Connector



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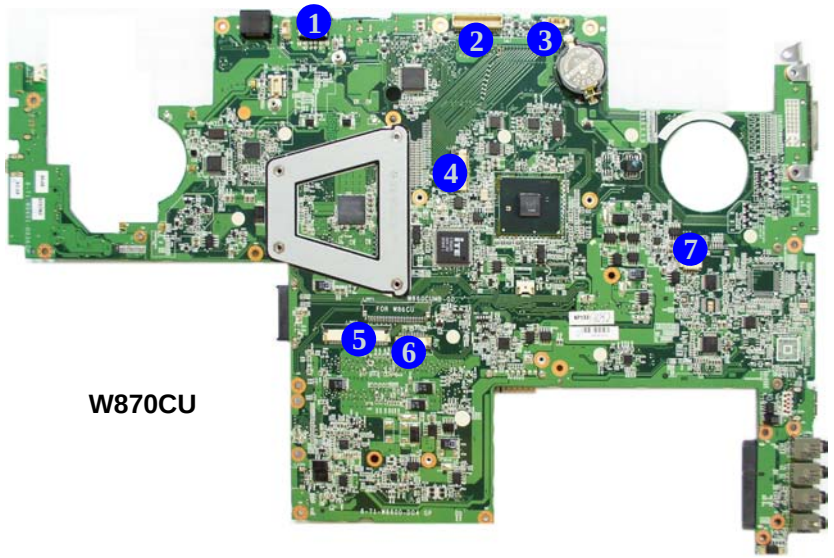

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Mainboard Overview - Bottom (Connectors)

Figure 10
Mainboard Bottom Connectors

1. USB Port
2. CPU Fan Cable Connector
3. BT Cable Connector
4. CD-ROM Connector
5. System Fan Cable Connector
6. VGA Fan Cable Connector
7. HDD Connector

Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the ***W860CU/W870CU*** series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

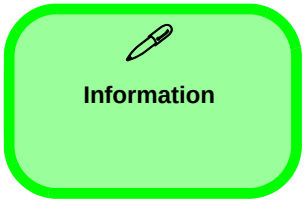
We suggest you completely review any procedure before you take the computer apart.

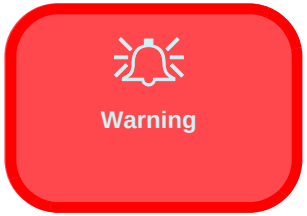
Procedures such as upgrading/replacing the RAM, optical device and hard disk are included in the User's Manual but are repeated here for your convenience.

To make the disassembly process easier each section may have a box in the page margin. Information contained under the figure # will give a synopsis of the sequence of procedures involved in the disassembly procedure. A box with a lists the relevant parts you will have after the disassembly process is complete. **Note**: The parts listed will be for the disassembly procedure listed ONLY, and not any previous disassembly step(s) required. Refer to the part list for the previous disassembly procedure. The amount of screws you should be left with will be listed here also.

A box with a will also provide any possible helpful information. A box with a contains warnings.

An example of these types of boxes are shown in the sidebar.





NOTE: All disassembly procedures assume that the system is turned **OFF**, and disconnected from any power supply (the battery is removed too).

Maintenance Tools

The following tools are recommended when working on the notebook PC:

- M3 Philips-head screwdriver
- M2.5 Philips-head screwdriver (magnetized)
- M2 Philips-head screwdriver
- Small flat-head screwdriver
- Pair of needle-nose pliers
- Anti-static wrist-strap

Connections

Connections within the computer are one of four types:

Locking collar sockets for ribbon connectors	To release these connectors, use a small flat-head screwdriver to gently pry the locking collar away from its base. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Pressure sockets for multi-wire connectors	To release this connector type, grasp it at its head and gently rock it from side to side as you pull it out. Do not pull on the wires themselves. When replacing the connection, do not try to force it. The socket only fits one way.
Pressure sockets for ribbon connectors	To release these connectors, use a small pair of needle-nose pliers to gently lift the connector away from its socket. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Board-to-board or multi-pin sockets	To separate the boards, gently rock them from side to side as you pull them apart. If the connection is very tight, use a small flat-head screwdriver - use just enough force to start.

Maintenance Precautions

The following precautions are a reminder. To avoid personal injury or damage to the computer while performing a removal and/or replacement job, take the following precautions:

1. **Don't drop it**. Perform your repairs and/or upgrades on a stable surface. If the computer falls, the case and other components could be damaged.
2. **Don't overheat it**. Note the proximity of any heating elements. Keep the computer out of direct sunlight.
3. **Avoid interference**. Note the proximity of any high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage components and/or data. You should also monitor the position of magnetized tools (i.e. screwdrivers).
4. **Keep it dry**. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.
5. **Be careful with power**. Avoid accidental shocks, discharges or explosions.
   - Before removing or servicing any part from the computer, turn the computer off and detach any power supplies.
   - When you want to unplug the power cord or any cable/wire, be sure to disconnect it by the plug head. Do not pull on the wire.
6. **Peripherals** – Turn off and detach any peripherals.
7. **Beware of static discharge**. ICs, such as the CPU and main support chips, are vulnerable to static electricity. Before handling any part in the computer, discharge any static electricity inside the computer. When handling a printed circuit board, do not use gloves or other materials which allow static electricity buildup. We suggest that you use an anti-static wrist strap instead.
8. **Beware of corrosion**. As you perform your job, avoid touching any connector leads. Even the cleanest hands produce oils which can attract corrosive elements.
9. **Keep your work environment clean**. Tobacco smoke, dust or other air-born particulate matter is often attracted to charged surfaces, reducing performance.
10. **Keep track of the components**. When removing or replacing any part, be careful not to leave small parts, such as screws, loose inside the computer.

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Cleaning

Do not apply cleaner directly to the computer, use a soft clean cloth.
Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.

Disassembly Steps

The following table lists the disassembly steps, and on which page to find the related information. **PLEASE PERFORM THE DISASSEMBLY STEPS IN THE ORDER INDICATED.**

To remove the Battery:

1. Remove the battery *page 2 - 5*

To remove the HDD:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 6*

To remove the Optical Device:

1. Remove the battery *page 2 - 5*
2. Remove the Optical device *page 2 - 9*

To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 10*

To remove and install a Processor:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 10*
3. Remove the processor *page 2 - 12*
4. Install the processor *page 2 - 14*

To remove the WLAN Module:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 10*
3. Remove the wireless LAN *page 2 - 15*

To remove the Bluetooth Module:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 10*
3. Remove the Bluetooth *page 2 - 16*

To remove the 3G:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 6*
3. Remove the 3G *page 2 - 17*

To remove the Keyboard:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 10*
3. Remove the keyboard *page 2 - 18*

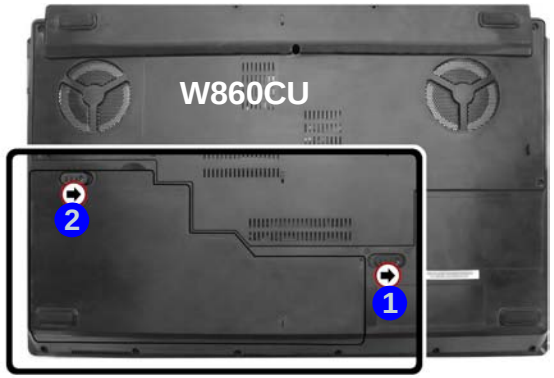
Removing the Battery

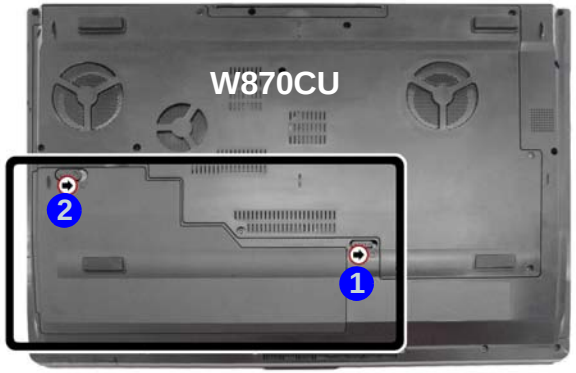
1. Turn the computer **off**, and turn it over.
2. Slide the latch 1 in the direction of the arrow.
3. Slide the latch 2 in the direction of the arrow, and hold it in place.
4. Lift the battery 3 out in the direction of the arrow 4.

Figure 1
Battery Removal

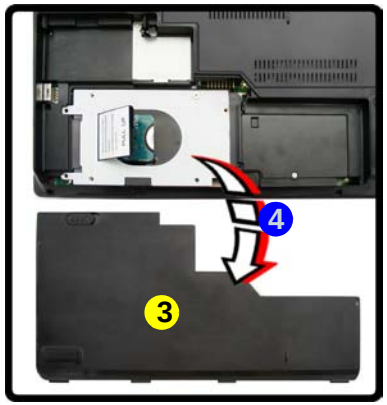
a. Slide the latch and hold in place.
b. Lift the battery out in the direction of the arrow.

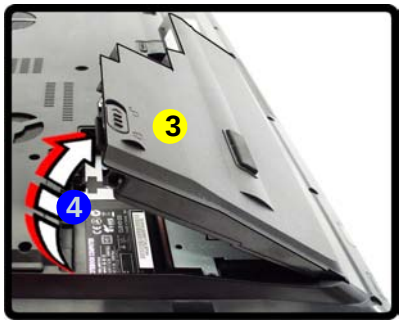
a.

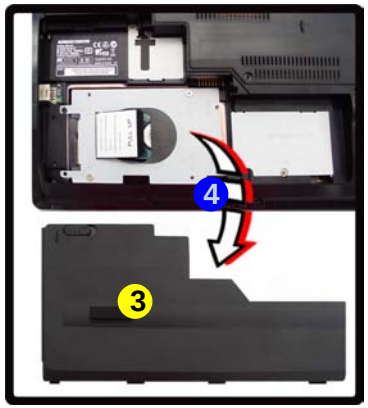




b.







3. Battery

Removing the Hard Disk Drive

Figure 2
HDD Assembly Removal

a. Locate the HDD bay cover and remove the screw(s).
b. Slide the HDD assembly in the direction of the arrow.

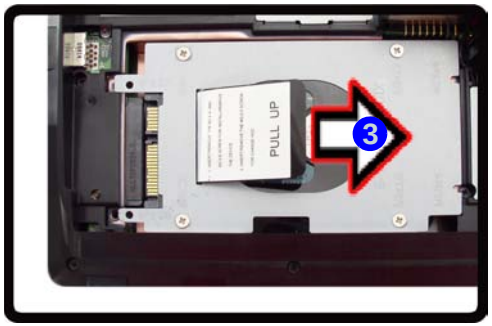
The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 9.5mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new hard disk.

Hard Disk Upgrade Process

1. Turn **off** the computer, and remove the battery (***page 2 - 5***).
2. The first hard disk bay is located under the battery compartment.
3. Remove screws 1 - 2 from the hard disk cover.
4. Slide the hard disk assembly in the direction of arrow 3.

a.

b.



- 2 Screws

HDD System Warning

New HDD's are blank. Before you begin make sure:

You have backed up any data you want to keep from your old HDD.

You have all the CD-ROMs and FDDs required to install your operating system and programs.

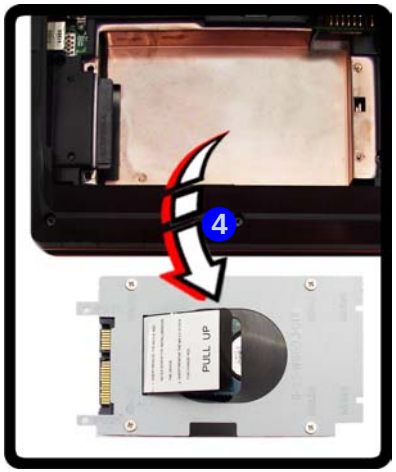
If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.

5. Lift the hard disk assembly out of the computer in the direction of arrow 4.
6. Remove the screws 5 - 8 and the cover bracket 9 from the harddisk 10.
7. Reverse the process to install a new hard disk (do not forget to replace all the screws and covers).

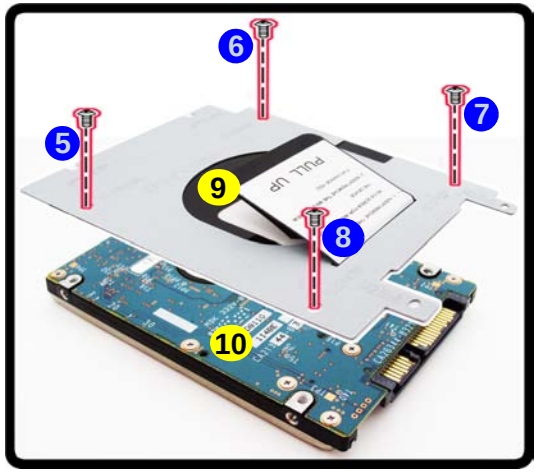
Figure 3
HDD Assembly Removal (cont'd.)

c. Lift the HDD assembly in the direction of the arrow.
d. Remove the screws and cover bracket from the HDD.

c.



d.



Hard Disk Screws & Cover

The hard disks and covers pictured here may appear slightly different from your model design (these designs are subject to change and upgrade without notice). Pay careful attention to the screws and cover bracket orientation.

9. HDD Cover Bracket
10. HDD

- 4 Screws

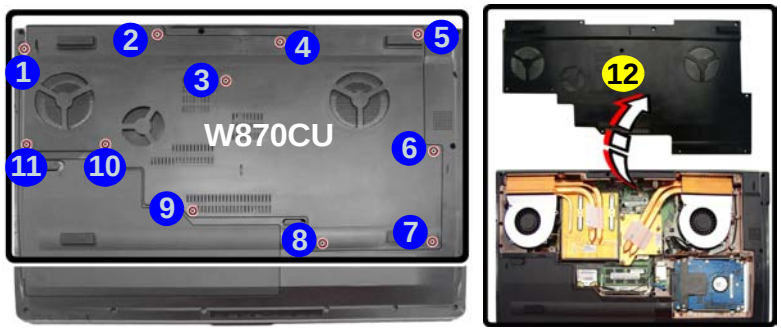
Removing the Hard Disk(s) in the Secondary HDD Bay (W870CU only)

1. Turn **off** the computer, and turn it over and remove the battery.
2. Locate the component bay cover and remove screws 1 - 11.
3. Carefully remove the cover 12 .
4. Slide the hard disk assembly in the direction of the arrow 13.
5. Lift the hard disk assembly 14 out of the compartment.
6. Remove the screws 15 - 20 to separate the hard disk 21 from the brackets.
7. Reverse the process to install a new hard disk drive (do not forget to replace all screws and covers).

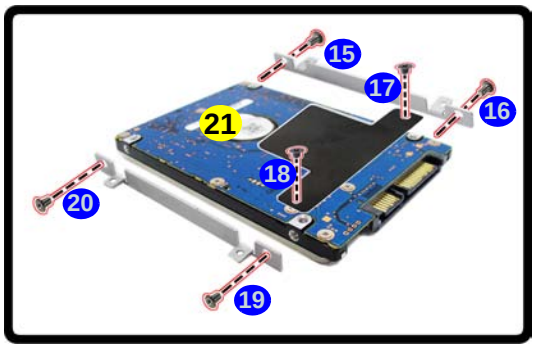
Figure 4
Secondary HDD Assembly Removal

a. Remove the screws and cover.
b. Slide the hard disk assembly out off the computer.
c. Remove the screws to separate the hard disk from the brackets.

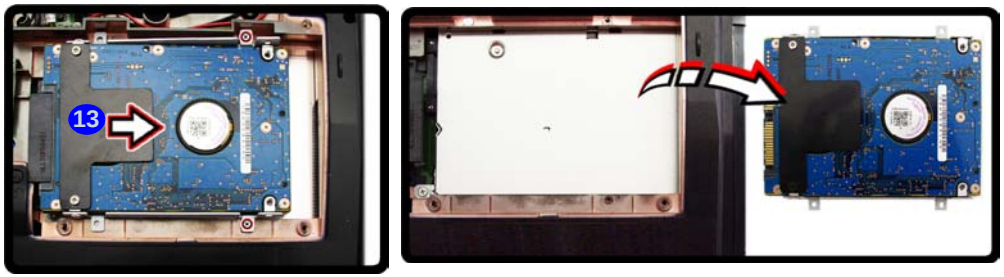
a.



c.



b.



21. Hard Disk

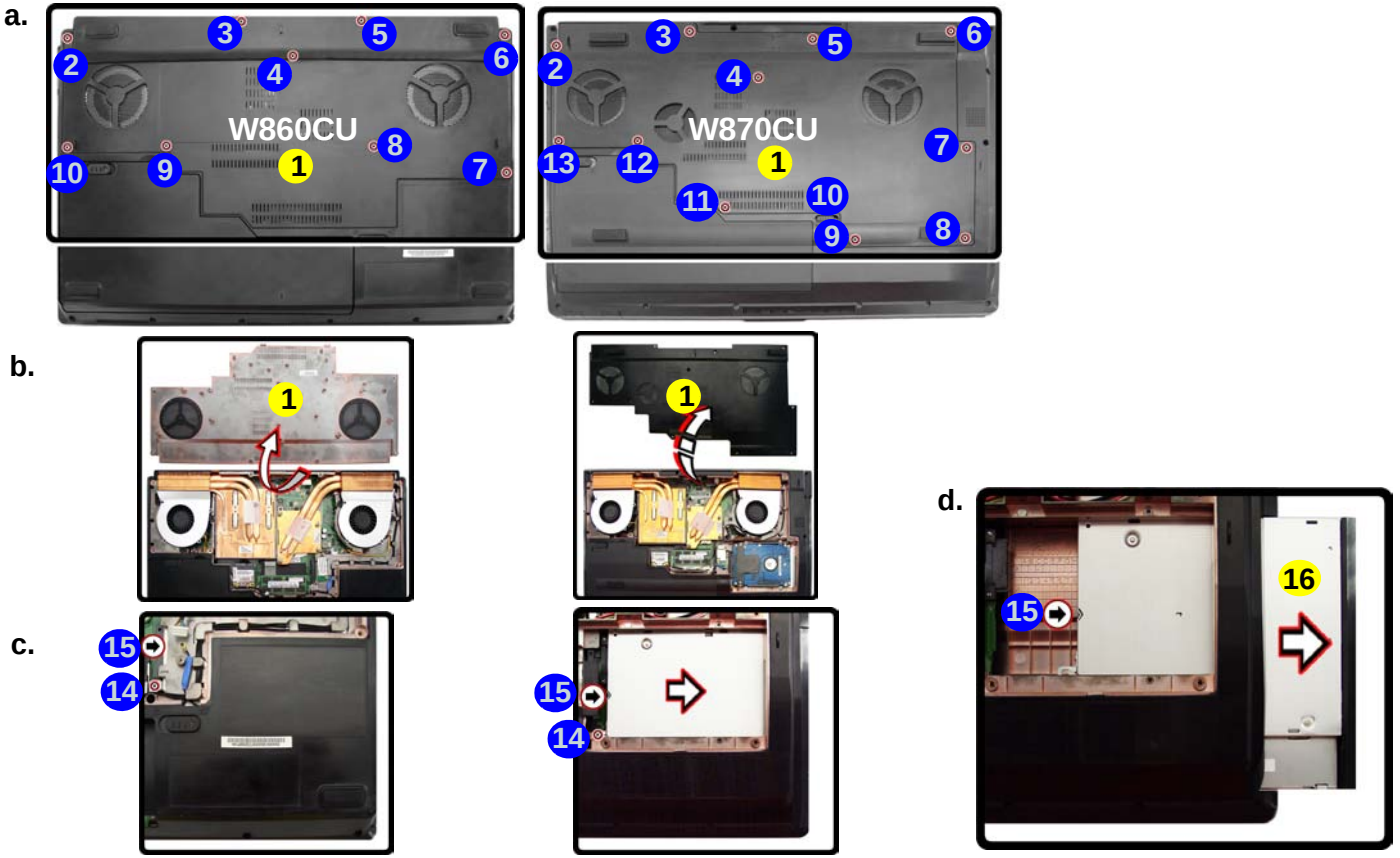
- 17 Screws

Removing the Optical (CD/DVD) Device

1. Turn **off** the computer, and remove the battery (*page 2 - 5*).
2. Locate the component bay cover 1 and remove screws 2 - 10 (W860CU) or 2 - 13 (W870CU).
3. Carefully remove the component bay cover 1.
4. Remove the screw at point 14, and use a screwdriver to carefully push out the optical device 16 at point 15.
5. Insert the new device and carefully slide it into the computer (the device only fits one way. DO NOT FORCE IT; The screw holes should line up).
6. Restart the computer to allow it to automatically detect the new device.

Figure 5
Optical Device Removal

a. Remove the screws.
b. Remove the cover.
c. Remove the screw.
d. Push the optical device out off the computer at point 14.



1. Component Bay Cover
15. Optical Device

- 10 Screws (W860CU) / 13 Screws (W870CU)

Figure 6
RAM Module Removal

a. Remove the screws.
b. Remove the cover.

Removing the System Memory (RAM)

The computer has two memory sockets for 204 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting **DDR3** 1333MHz. The main memory can be expanded up to 4GB. The SO-DIMM modules supported are DDRIII 1GB, and 2GB Modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

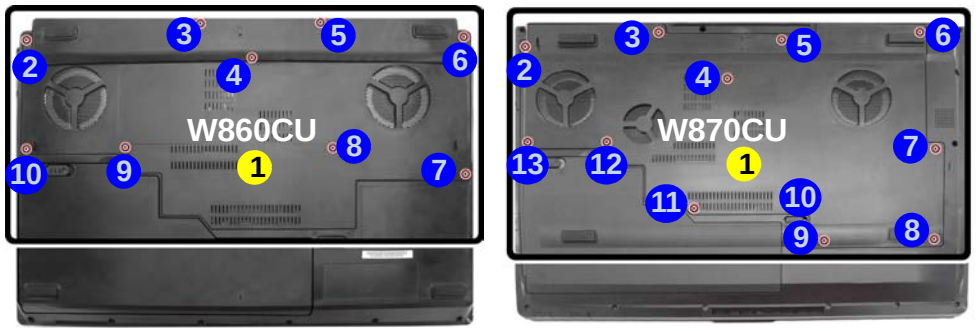
Memory Upgrade Process

1. Turn **off** the computer, remove the battery (*page 2 - 5*).
2. Locate the component bay cover 1 and remove screws 2 - 10 (W860CU) or 2 - 13 (W870CU).
3. Carefully remove the component bay cover 1.
4. The RAM is located at point 14.

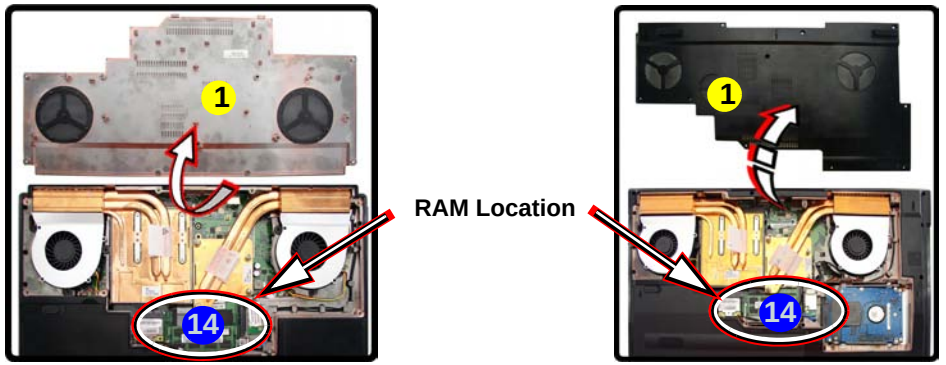
Contact Warning

Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.

a.



b.

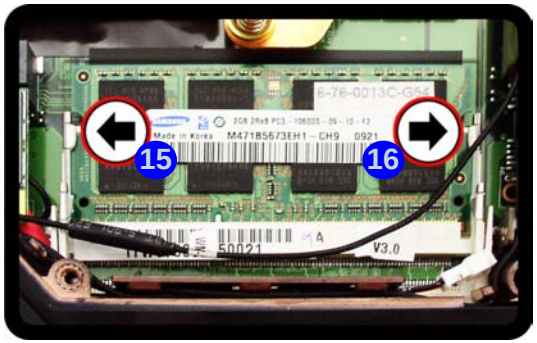


1. Component Bay Cover

- 9 Screws (W860CU) / 12 Screws (W870CU)

5. Gently pull the two release latches (15 & 16) on the sides of the memory socket in the direction indicated by the arrows (***Figure 7c***).

c.



d.

Figure 7
RAM Module Removal (cont'd.)

c. Pull the release latch(es).
d. Remove the module(s).

6. The RAM module(s) 17 will pop-up (***Figure 7d***), and you can then remove it.
7. Pull the latches to release the second module if necessary.
8. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
9. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the slot as it will go. DO NOT FORCE the module; it should fit without much pressure.
10. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
11. Replace the bay cover and screws.
12. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

17. RAM Module(s)

Removing and Installing the Processor

Processor Removal Procedure

1. Turn **off** the computer, remove the battery (*page 2 - 5*), and component bay cover (*page 2 - 10*).
2. Remove the CPU heat sink screws in the order 4, 3, 2 & 1 (the reverse order as indicated on the label).
3. Carefully lift up the heat sink 5 (*Figure 8c*) off the computer.

Figure 8
Processor Removal

a. Remove the screws.
b. Remove the heat-sink fan.
c. Remove the screws in the order indicated.
d. Remove the heat sink.

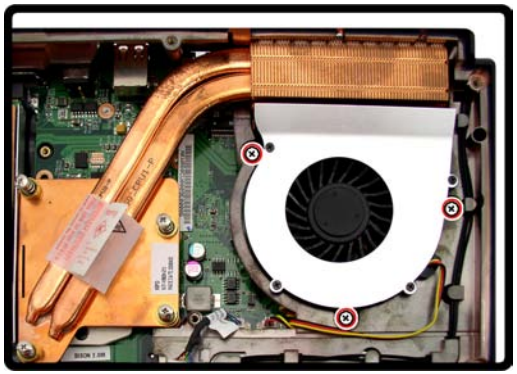
CPU Warning

In order to prevent damaging the contact pins when removing the CPU, it is necessary to first remove the WLAN module from the computer.

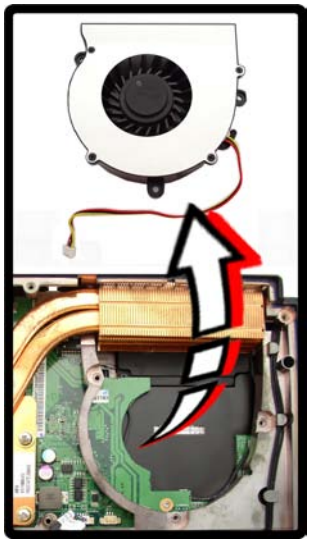
5. Heat Sink

- 4 Screws

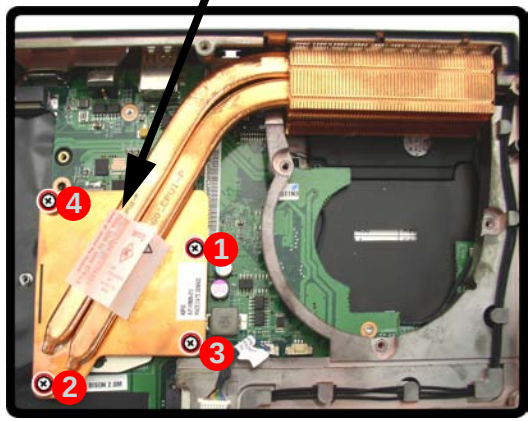
a.



b.

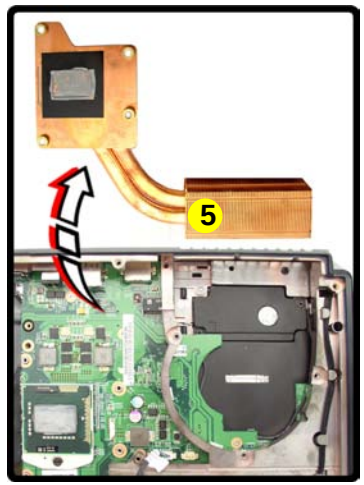


c.



Note: Loosen the screws in the reverse order 4, 3, 2, 1 as indicated on the label.

d.



4. Turn the release latch 6 towards the unlock symbol, to release the CPU (*Figure 9a*).
5. Carefully (it may be hot) lift the CPU 7 up out of the socket (*Figure 9b*).
6. See *page 2 - 14* for information on inserting a new CPU.
7. When re-inserting the CPU, pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!).

Figure 9
Processor Removal (cont'd)

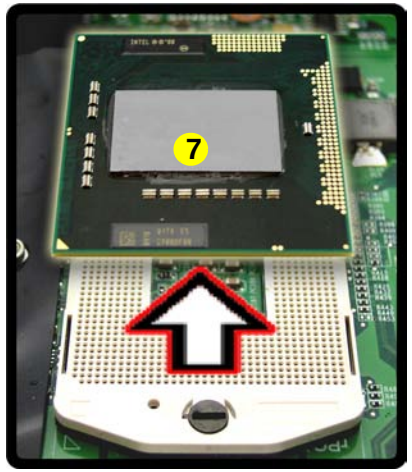
e. Turn the release latch to unlock the CPU.
f. Lift the CPU out of the socket.

e.

Unlock

Lock

f.



Caution

The heat sink, and CPU area in general, contains parts which are subject to high temperatures. Allow the area time to cool before removing these parts.

7. CPU

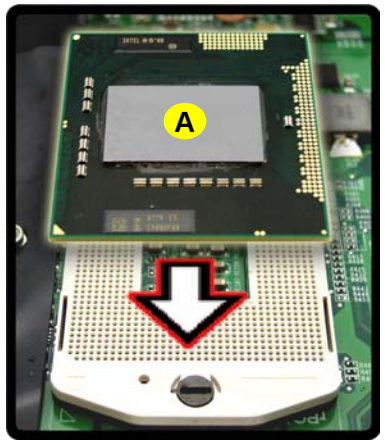
Figure 10
Processor Installation

a. Insert the CPU.
b. Turn the release latch towards the lock symbol.
c. Remove the sticker from the heat sink and insert the heat sink.
d. Tighten the screws.

Processor Installation Procedure

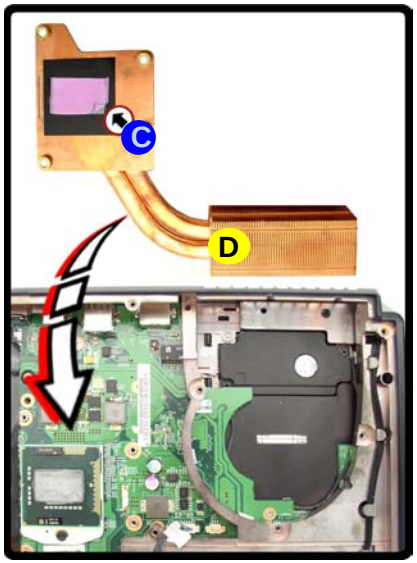
1. Insert the CPU (A), pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!), and turn the release latch (B) towards the lock symbol (*Figure 10b*).
2. **Remove the sticker** (C) (*Figure 10c*) from the heat sink.
3. Insert the heat sink (D) as indicated in *Figure 10c*.
4. Tighten the CPU heat sink screws in the order (1), (2), (3) & (4) (the order as indicated on the label and *Figure 10d*).
5. Replace the CPU fan, component bay cover and tighten the screws (*page 2 - 12*).

a.

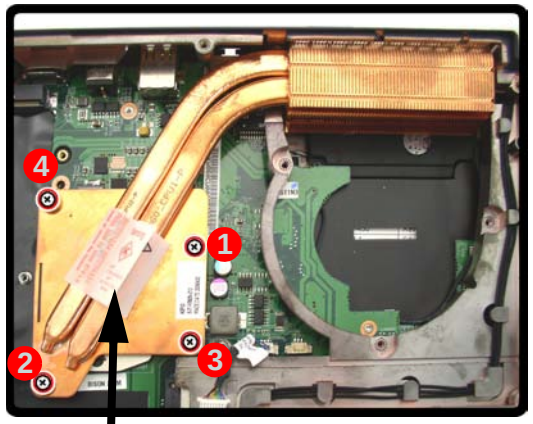


b.

c.



d.



Note:

Tighten the screws in the order 1, 2, 3, 4 as indicated on the label.

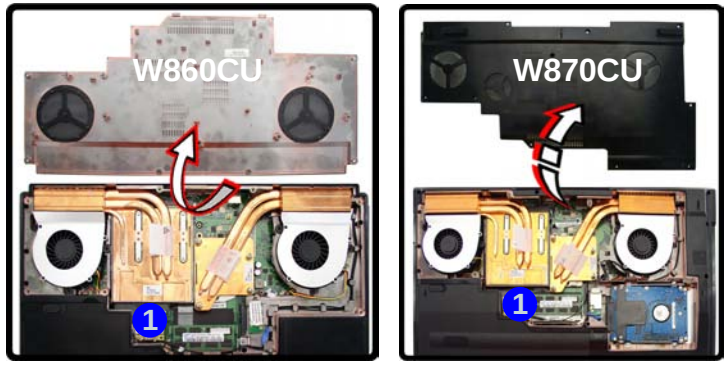
A. CPU
D. Heat Sink

- 4 Screws

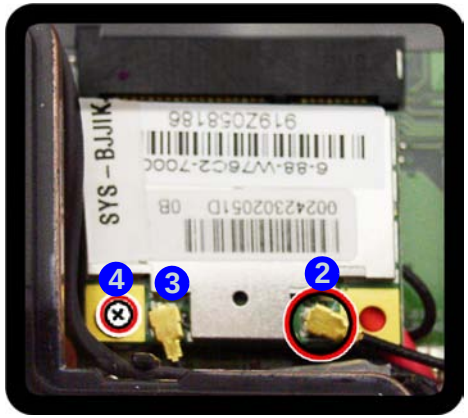
Removing the Wireless LAN Module

1. Turn **off** the computer, remove the battery (*page 2 - 5*) and the component bay cover (*page 2 - 10*).
2. The Wireless LAN module will be visible at point 1 on the mainboard.
3. Carefully disconnect cables 2 - 3, then remove screw 4 from the module socket.
4. The Wireless LAN module 5 will pop-up.
5. Lift the Wireless LAN module (*Figure 11d*) up and off the computer.

a.



b.



c.

d.

Figure 11
Wireless LAN Module Removal

a. Remove the cover.
b. Disconnect the cables and remove the screw.
c. The WLAN module will pop up.
d. Lift the WLAN module out.

5. WLAN Module.

- 1 Screw

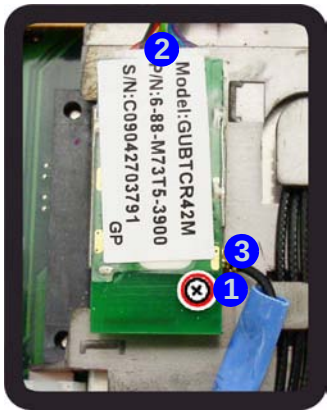
Removing the Bluetooth Module

1. Turn **off** the computer, remove the battery (*page 2 - 5*), and component bay cover (*page 2 - 10*).
2. Locate the Bluetooth module, and remove the screw 1.
3. Carefully separate the Bluetooth module from the connector 2 and disconnect the cable 3.
4. Lift the Bluetooth module 4 (*Figure 12b*) up and off the computer.

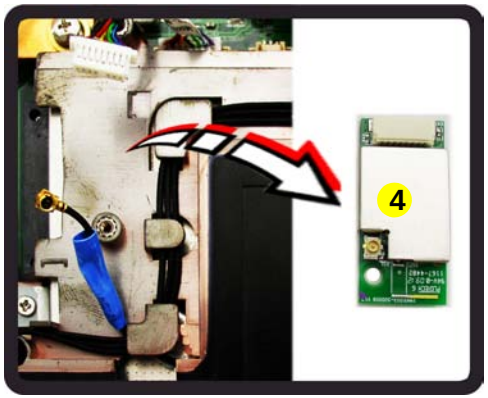
Figure 12
Bluetooth Module Removal

a. Remove the screw and disconnect the cable and the connector.
b. Lift the Bluetooth module up off the socket.

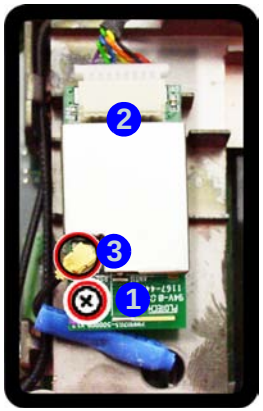
a. **W860CU**



b.



a. **W870CU**



b.

4. Bluetooth Module

- 1 Screw

Removing the 3G Module

1. Turn **off** the computer, remove the battery (*page 2 - 5*).
2. Locate the 3G module cover, and remove the screw 1.
3. Remove the 3G module cover 2 and carefully disconnect the cable 3 and remove the screw 4 from the 3G module.
4. Lift the 3G module 5 (*Figure 13b*) up and off the computer.

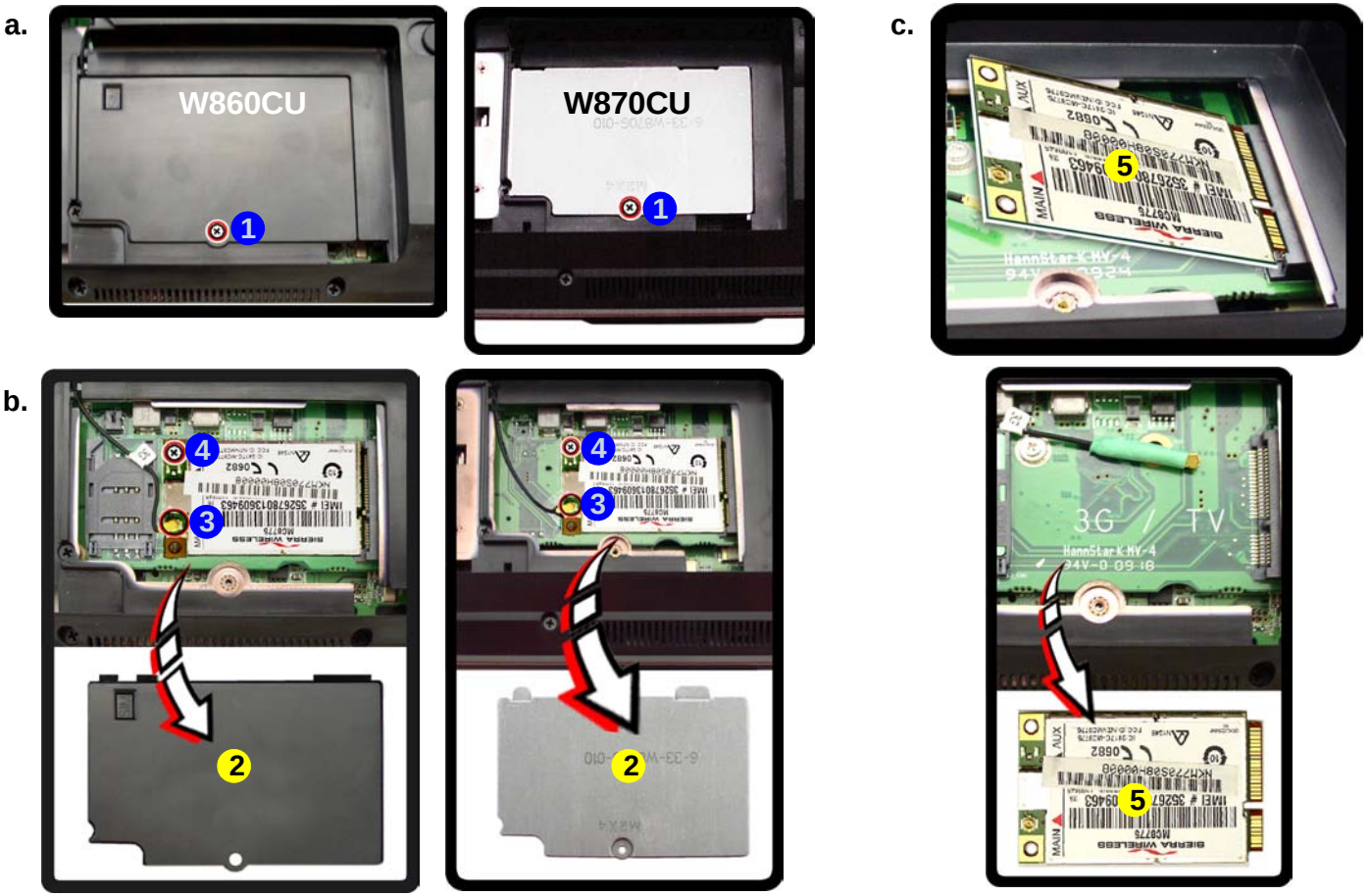


Figure 13
3G Module Removal

a. Remove the screw.
b. Remove the 3G module cover. Disconnect the cable and remove the screw.
c. Lift the 3G module up off the socket.

2. 3G Module Cover
5. 3G Module

- 1 Screw

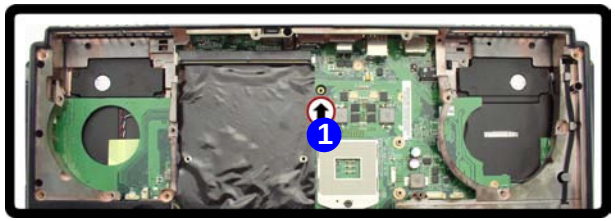
Figure 14
Keyboard Removal

a. Press at point 1 to unsnap the LED cover module.
b. Lift the LED cover module and disconnect the cable.
c. Remove the screws.
d. Disconnect the cable from the locking collar.
e. Remove the keyboard.

Removing the Keyboard

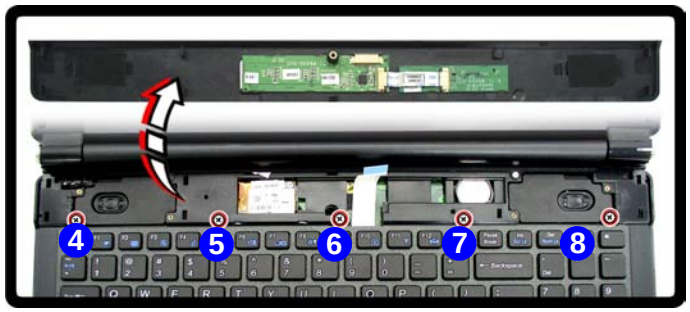
1. Turn **off** the computer, and remove the battery (*page 2 - 5*), component bay cover (*page 2 - 10*), and processor (*page 2 - 12*).
2. **W860CU: (see over for W870CU)** Press at point 1 to unsnap the LED cover module 2 (you may need to use a small screwdriver to do this).
3. Turn the computer over, open the Lid/LCD and carefully lift the LED cover module 2 and disconnect the cable 3.
4. Remove screws 4 - 8 from the keyboard.
5. Carefully lift the keyboard 9 up, being careful not to bend the keyboard ribbon cable (*Figure 14d*).
6. Disconnect the keyboard ribbon cable 10 from the locking collar socket 11.
7. Remove the keyboard.

a.



b.

c.



d.

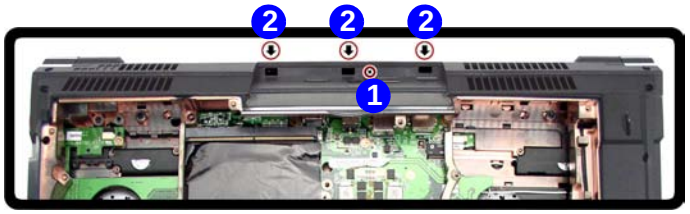
e.

2. LED Cover Module
9. Keyboard

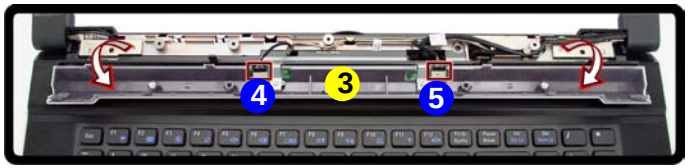
- 5 Screws

8. **W870CU:** Remove the screw 1 and press at point 2 to unsnap the the hinge cover module.
9. Turn the computer over, open the Lid/LCD and lift the hinge cover module 3 and disconnect the cables 4 & 5.
10. Turn the computer over again, press at point 6 to unsnap the LED cover module 7 (you may need to use a small screwdriver to do this).
11. Turn the computer over, open the Lid/LCD and carefully lift the LED cover module 7 and disconnect the cable 8.
12. Remove screws 9 - 13 from the keyboard
13. Carefully lift the keyboard 14 up, being careful not to bend the keyboard ribbon cable (***Figure 14d***).
14. Disconnect the keyboard ribbon cable 15 from the locking collar socket 16.
15. Remove the keyboard 14 .

a.

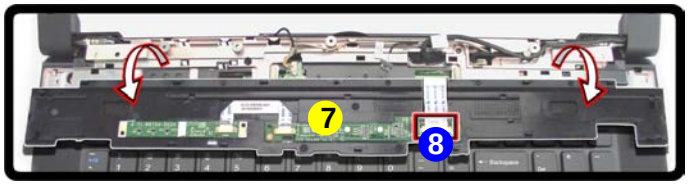


b.



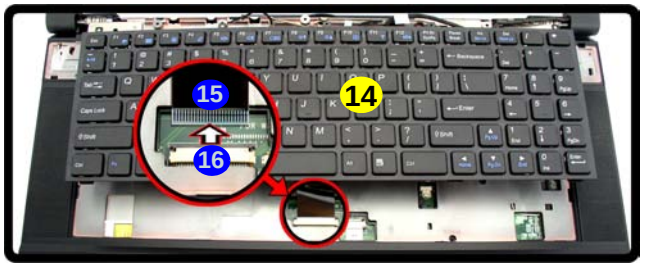
c.

d.



e.

f.



g.

Figure 15
Keyboard Removal (cont'd.)

a. Remove the screw and press at point 2 toun-snap the hinge cover module.
b. Lift the hinge cover mod-ule and disconnect the cables.
c. Press at point 6 to un-snap the LED cover module.
d. Lift the LED cover mod-ule and disconnect the cable.
e. Remove the screws.
f. Disconnect the cable from the locking collar.
g. Remove the keyboard.

3. Hinge Cover Mod-ule
7. LED Cover Module
14. Keyboard

- 6 Screws

Appendix A: Part Lists

This appendix breaks down the ***W860CU/W870CU*** series notebook's construction into a series of illustrations. The component part numbers are indicated in the tables opposite the drawings.

Note: This section indicates the *manufacturer's* part numbers. Your organization may use a different system, so be sure to cross-check any relevant documentation.

Note: Some assemblies may have parts in common (especially screws). However, the part lists DO NOT indicate the total number of duplicated parts used.

Note: Be sure to check any update notices. The parts shown in these illustrations are appropriate for the system at the time of publication. Over the product life, some parts may be improved or re-configured, resulting in *new* part numbers.

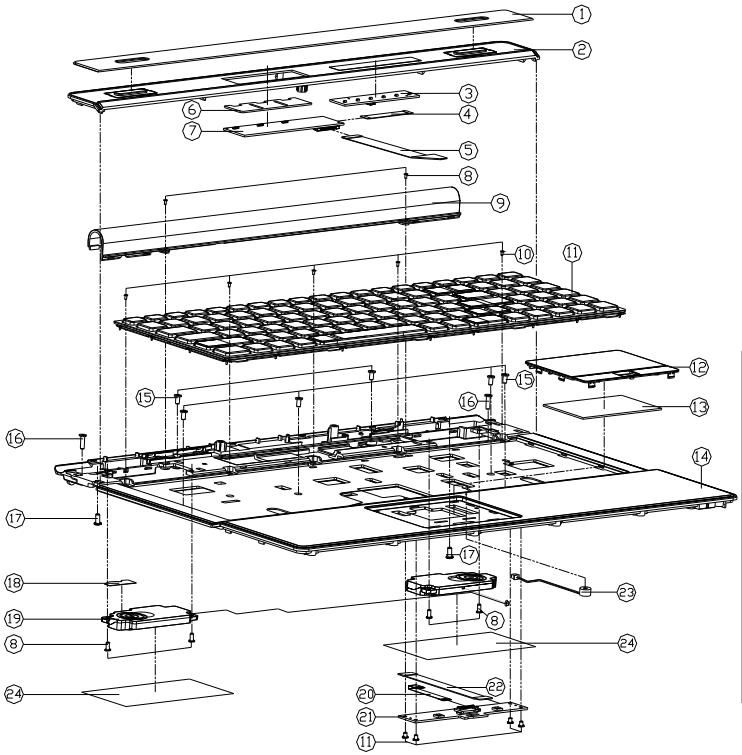
Part List Illustration Location

The following table indicates where to find the appropriate part list illustration.

Table A- 1
Part List Illustration Location

Parts	W860CU	W870CU
Top with Fingerprint	*page A - 3*	*page A - 9*
Top without Fingerprint	*page A - 4*	*page A - 10*
Bottom	*page A - 5*	*page A - 11*
LCD	*page A - 6*	*page A - 12*
2nd HDD		*page A - 13*
COMBO	*page A - 7*	*page A - 14*
DVD-Dual Drive	*page A - 8*	*page A - 15*

Top with Fingerprint (W860CU)

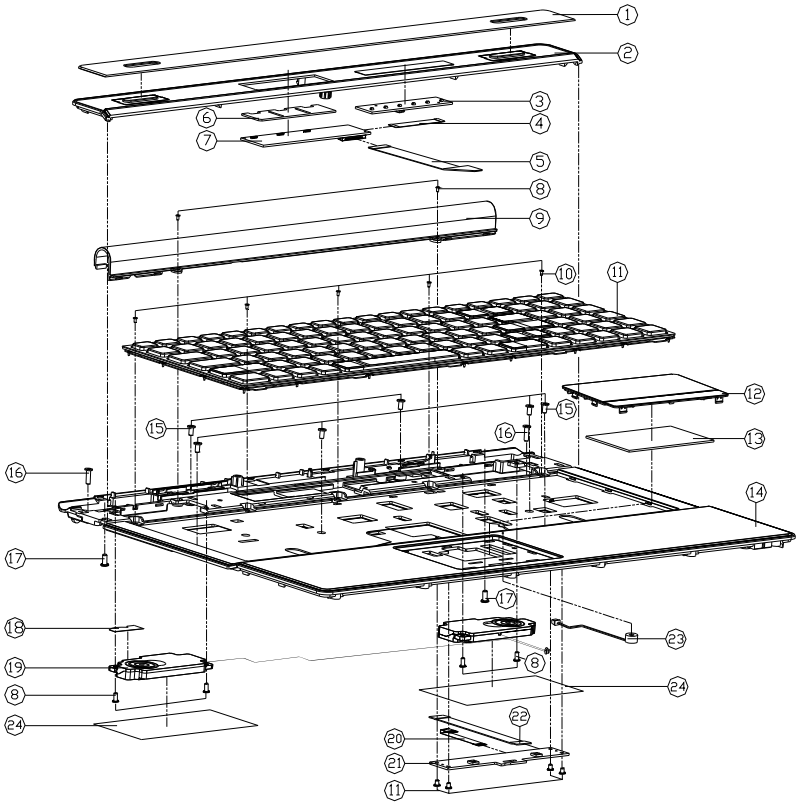


ITEM	PART NAME	PART NO	REMARK
1	PLATE FOR HOTKEY (NP) W860CU	6-42-W8602-042	
2	HOTKEY COVER MODULE (NP) W860CU	6-42-W8602-102	
3	LED BOARD V3.0 W860CU	6-77-W8604-D03	
4		6-43-W8600-030	
5		6-43-W8600-041	
6	LED LENS FOR HOT KEY W860CU	6-42-W8602-021	
7	TOUCH SENSOR BOARD V3.0 W860CU	6-77-W860G-D03	
8		6-35-C1120-4RB	
9		6-42-W8602-031	
10	SCREW M2*3L KI NI ICT NY	6-35-B1120-3RA	
11		6-79-W860CUOK-013	
12		6-42-W8602-062	
13	TOUCH PAD TPA2U2V4999M2 W840T	6-49-W8472-010	
14	TOP CASE MODULE PVT W860CU	6-39-W8602-011	
15		6-35-B6125-5R0	
16	SCREW M2.5*3L KI BK/Z NY ICT	6-35-B6125-8R0	
17	SCREW M2.5*4L KI BK/D ICT NY	6-35-B4125-4RA	
18	MYLAR 22*9 W860CU	6-40-W8602-050	
19		6-23-5WB60-012	
20		6-43-M8600-030	
21		6-77-W860A-N02	
22		6-43-W8600-021	
23		6-23-EMB60-011	
24		6-40-W860S-031	

Figure A - 1
Top with Fingerprint (W860CU)

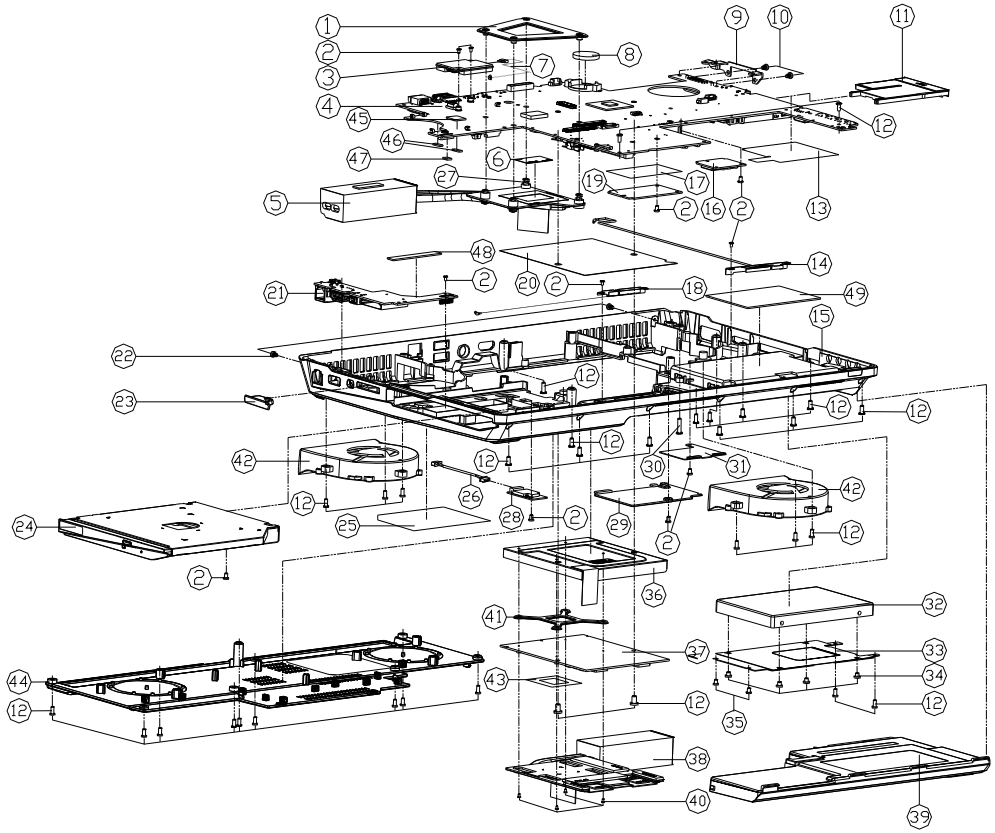
Top without Fingerprint (W860CU)

Figure A - 2
Top without Fingerprint (W860CU)



ITEM	PART NAME	PART NO	REMARK
1	PLATE FOR HOTKEY	6-42-W8602-042	
2	HOTKEY COVER MODULE (MP) W860CU	6-42-W8602-102	
3	LED BOARD V3.0 W860CU	6-77-W8604-D03	
4	FFC CABLE FOR SENSOR TO LED	6-43-W8600-030	
5	FFC CABLE FOR SENSOR TO MAIN	6-43-W8600-041	
6	LED LENS FOR HOT KEY W860CU	6-42-W8602-021	
7	TOUCH SENSOR BOARD V3.0 W860CU	6-77-W860G-D03	
8	SCREW M2*4L I NI ICT NY	6-35-C1120-4RB	
9	HINGE COVER PC+ABS CM6140 W860CU	6-42-W8602-031	
10	SCREW M2*3L KI NI ICT NY	6-35-B1120-3RA	
11	K/B USA & FRAME (US) MODULE W860CU	6-79-W860CU0K-013	
12	T/P COVER W/O FINGER PC+ABS CM6140 (MP) W860CU	6-42-W8602-052	
13	TOUCH PAD TPA2U2VA99RM2 W840T	6-49-W84T2-010	
14	TOP CASE MODULE PVT W860CU	6-39-W8602-011	
15	SCREW M2.5*5L	6-35-B6125-5R0	
16	SCREW M2.5*8L KI BK/Z NY ICT	6-35-B6125-8R0	
17	SCREW M2.5*4L KI BK/D ICT NY	6-35-B4125-4RA	
18	MYLAR 22*9 W860CU	6-40-W8602-050	
19	SPEAKER L/R	6-23-5W860-012	
20	FFC CABLE FOR CLICK BOARD TO	6-43-M8600-030	
21	CLICK BOARD V3.0 W860CU	6-77-W8602-D03	
22	FFC CABLE FOR CLICK BOARD TO	6-43-W8600-021	
23	RF ANTENNA	6-23-EM860-011	
24	AL FOIL UNDER SPEAKER	6-40-W860S-031	

Bottom (W860CU)

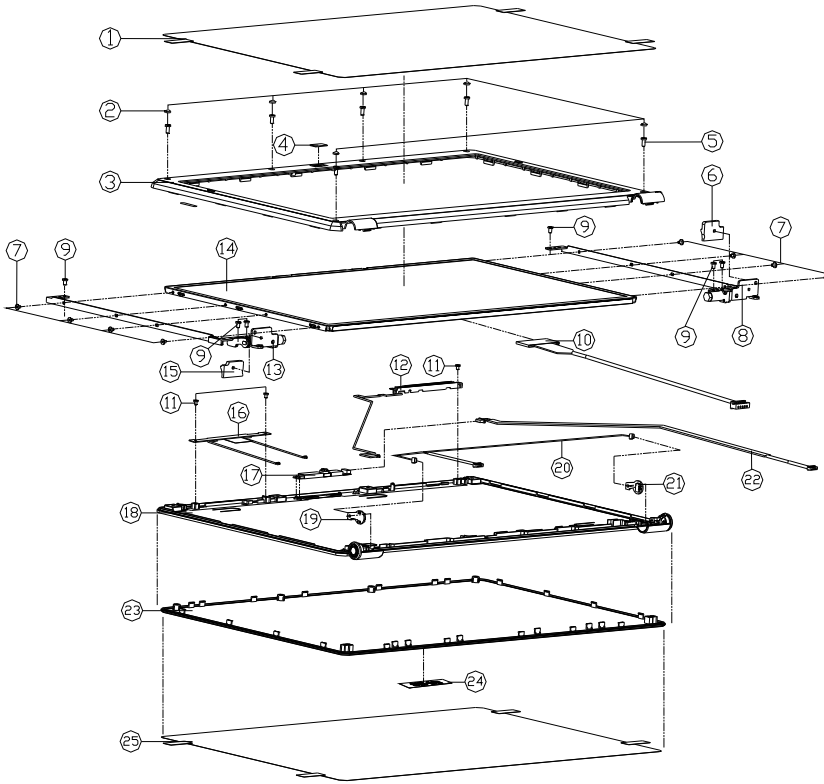


ITEM	PART NAME	PART NO	REMARK
1	[illegible]	6-33-W860S-101	
2	SCREW M2*3L KI NI ICT NY	6-35-B1120-3RA	
3	[illegible]	6-88-L39TI-5301	(OPTION)
3	[illegible]	6-88-M76S1-8111	(OPTION)
4	MAIN BOARD V40 (V/D 3G&1PMD W860CU	6-77-W8600-D04	
4	MAIN BOARD V40(V/3G W/O 1PMD W860CU	6-77-W8600-D04-2	
5	CPU HEATSINK COPPER C100 W860CU	6-31-W860N-011	
6	THERMAL PAD	6-48-W76C3-010	
7	MDC CABLE L=275 MM W860CU	6-43-W860U-011	
8	BATTERY 3V 210MA CR2032 (MITSUBISHI)	6-23-62015-607	
9	DVI PORT BRACKET (M/B) SUS 430 W860CU	6-33-W860S-021	
10	SCREW 4-40*5L K NI ACT NY	6-35-81304-5R0	
11	DUMMY NEW CARD PC+ABS TN120R	6-42-T12R3-011	
12	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
13	NEW CARD NYLAR X30 FOR M/B TN120R	6-40-T12RS-010	
14	[illegible]	6-23-7W860-060	
15	BOTTOM CASE MODULE W860CU	6-39-W8603-012	
16	VGA 82811A+G-N INTEL SHIRLEY PCAK (VIFI	6-88-M7352-4200	(OPTION)
16	VGA 82810GA RTL8139SE	6-88-W76C2-7000	(OPTION)
16	VGA 82810GA RTL8139SE	6-88-W76C2-8700	(OPTION)
17	MYLAR 64CB3B3.3MMBLACK(DOR SOCKET POSITION	6-40-M66NS-040	
18	[illegible]	6-23-7W860-040	
19	VGA HDPA (8070 HUAWEI MINI-CARD USB 375G	6-88-M810W-8800	(OPTION)
20	[illegible]	6-40-W860S-011	
21	MULTI I/O BOARD V3.0A W860CU	6-77-W8601-D03A	(OPTION)
22	SCREW M2*4L KI BK/Z ICT NYW35 t=0.4	6-35-B6120-6RB	
23	RUBBER(M8 HEAD)(OLIVE)(H=4.6)	6-47-M76SB-010	
24	SATA DVD SUPER MULTI ASSY (OPTION) W860CU	6-79-W860CU00-000	(OPTION)
24	SATA BLU-RAY COMBO ASSY (OPTION) W860CU	6-79-W860CU0W-000	(OPTION)
25	PRODUCT LABEL FOR W860CU	6-45-W8603-010	
25	PRODUCT LABEL FOR W860CUF	6-45-W860CUF3-010	
26	BLUETOOTH CABLE 8P AWG.30	6-43-M66NB-010	
27	[illegible]	6-35-41125-9R5	
28	[illegible]	6-88-M73T5-3900	
28	[illegible]	6-88-M77C5-5300	
29	COVER 3G SIM PC+ABS(DULL)-T0.8	6-42-W860G-011	
30	SCREW M2.5*8L KI BK/Z NY ICT	6-35-B6125-8R0	
31	[illegible]	6-33-W8601-031	
32	W/O HDD ASS'Y W860CU	6-79-W860CU0J-010	
33	HDD BRACKET SECC+NYLAR W860CU	6-33-W860J-011	
34	SCREW M3*4L KI BZ ICT NY (D=4.8 T=1.5)	6-35-B6130-4RB	
35	SCREW M2.5*3L I BZ ICT GRY-PANCH NY (T=1.5 D=4.5)	6-35-C2125-3R0	
36	VGA BOTTOM SHIELDING MODULE W860CU	6-33-W8602-102	
37	VGA BOARD NVIDIA N10E-G1T DDR3 128/256MB	6-77-M57NL-D01-C	
37	VGA BOARD NVIDIA N10E-G1T DDR3 128/256MB	6-77-M57NL-D01-D	
38	VGA HEATSINK COPPER C1100 W860CU	6-31-W860N-023	
39	[illegible]	6-87-W860S-421	
39	[illegible]	6-87-W860S-421A	
40	SCREW M1.6A2L D=3.2 T=3.4 KI BZ ICT NY	6-35-B2116-2R0	
41	VGA SUPPORTER SUS430 W860CU	6-33-W860S-030	
42	FAN MODULE W860CU	6-31-W860S-102	
43	VGA CHIP NYLAR(37*37)1 N10E-G1X	6-40-M860S-0B0	
44	CPU COVER MODULE W860CU	6-42-W860S-102	
45	RUBBER (5*4*2.5) FOR M/B W860CU	6-47-W860S-040	
46	PORON (20*8*3T,SM55) FOR MB W860CU	6-47-W860S-060	
47	RUBBER(7*7*2T) FOR M/B W860CU	6-47-W860S-030	
48	PORON H48 (40*10*4.5T) FOR MB W860CU	6-47-W860S-050	
49	PORON(100*40*4.35T) FOR BOTTOM CASE W860CU	6-47-W8603-020	

Figure A - 3
Bottom (W860CU)

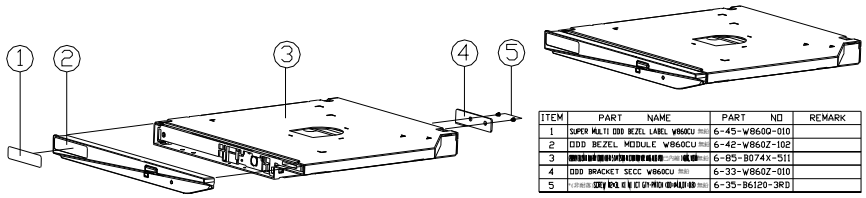
LCD (W860CU)

Figure A - 4
LCD (W860CU)



ITEM	PART NAME	PART NO	REMARK
1	LCD FRONT CASE PROTECT W/LAM(PC) W860CU	6-40-W8601-050	
2	FRONT COVER TOP RUBBER SILICONE W860CU	6-47-W8601-011	
3	LCD FRONT COVER MODULE W860CU	6-39-W8601-011	
4	CCD 2MP PMMA M810L	6-42-M8101-010	W/ CCD
4	W/O CCD COSMETIC PC M810L	6-42-M8101-020	W/O CCD
5	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
6	HINGE RUBBER R SILICONE 50 W860CU	6-47-W8601-051	
7	SCREW M2*3L K1 BZ ICT NY	6-35-86120-3RD	
8	LCD HINGE R (SECC+SK7) W860CU	6-33-W8601-011	
9	SCREW M2.5*4L K1 BK/D ICT NY	6-35-84125-4RA	
10	LCD CABLE LVDS FOR HOTEFLON W860CU	6-43-W8601-011	
11	[illegible]	6-35-81120-3RD	
12	ANTENNA WCDMA PIFA 3G	6-23-7W860-010	(OPTION)
13	LCD HINGE L (SECC+SK7) W860CU	6-33-W8601-021	
14	LCD TFT FHD AU H[illegible] V2 GLARE TYPE LCD 5.0"	6-50-L8257-G00	
14	LCD TFT HD AU H[illegible] V2 GLARE TYPE LCD 5.0"	6-50-LA157-G00	
14	LCD TFT HD AU H[illegible] V2 GLARE TYPE CSOT[illegible]	6-50-L8155-G00	
14	LCD TFT HD CHIMEI INNOLUX GLARE TYPE 5.0" W/ LCD	6-50-L8152-D01	
14	LCD TFT HD [illegible]	6-50-L8155-V01	
15	HINGE RUBBER L SILICONE 50 W860CU	6-47-W8601-041	
16	[illegible]	6-23-7W860-031	
17	WC CAMERA BISCB FIX 0M2457-B0 2M W/4PI	6-88-M740C-4913	
18	LCD FRAME MODULE W860CU	6-42-W8601-101	
19	LEFT-LCD BOARD V2.0 W860CU	6-77-W8605-D02	
20	BUTTON BOARD CABLE 3P AWG30 W860CU	6-43-W8600-011	
21	POWER BUTTON BOARD V3.0 W860CU	6-77-W860V-D03	
22	CABLE CCD 5P W860CU	6-43-W860T-011	
23	LCD BACK COVER MODULE W860CU	6-39-W8601-021	
23	LCD BACK COVER SAMIC CMG60 MDFA W860CU	A6-39-W86F1-01A	
24	[illegible]	6-45-M741S-020	
25	LCD BACK CASE PROTECT W/LAM(PC) W860CU	6-40-W8601-031	

COMBO (W860CU)

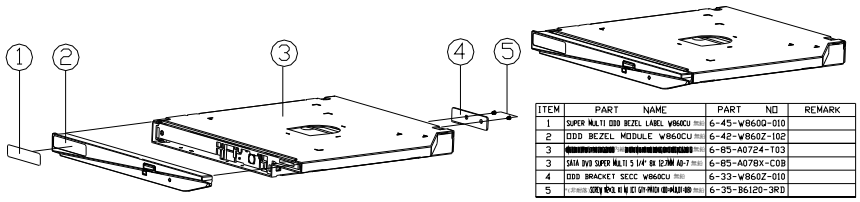


ITEM	PART NAME	PART NO	REMARK
1	SUPER MULTI DDD BEZEL LABEL W860CU	6-45-W860Q-010	
2	DDD BEZEL MODULE W860CU	6-42-W860Z-102	
3	[illegible]	6-85-B074X-511	
4	DDD BRACKET SECC W860CU	6-33-W860Z-010	
5	[illegible]	6-35-B6120-3RD	

Figure A - 5
COMBO (W860CU)

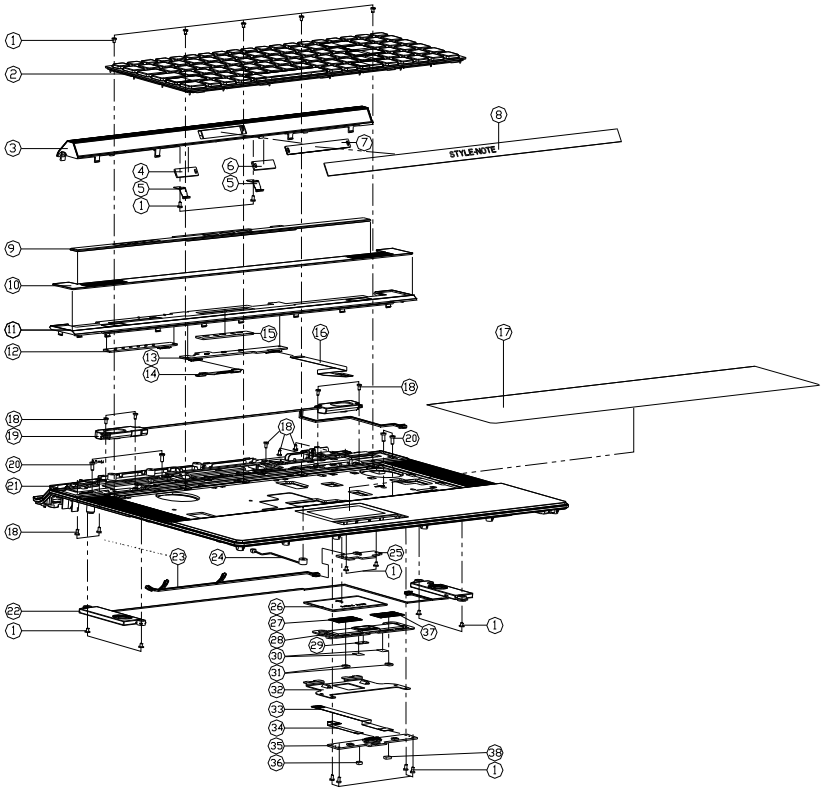
DVD-Dual Drive (W860CU)

Figure A - 6
DVD-Dual Drive (W860CU)



ITEM	PART NAME	PART NO	REMARK
1	SUPER MULTI ODD BEZEL LABEL W860CU	6-45-W860Q-010	
2	ODD BEZEL MODULE W860CU	6-42-W860Z-102	
3	[illegible]	6-85-A0724-T03	
3	SATA DVD SUPER MULTI 5.1/4" DL [illegible] AD-7	6-85-A078X-C0B	
4	ODD BRACKET SECC W860CU	6-33-W860Z-010	
5	[illegible]	6-35-B6120-3RD	

Top with Fingerprint (W870CU)

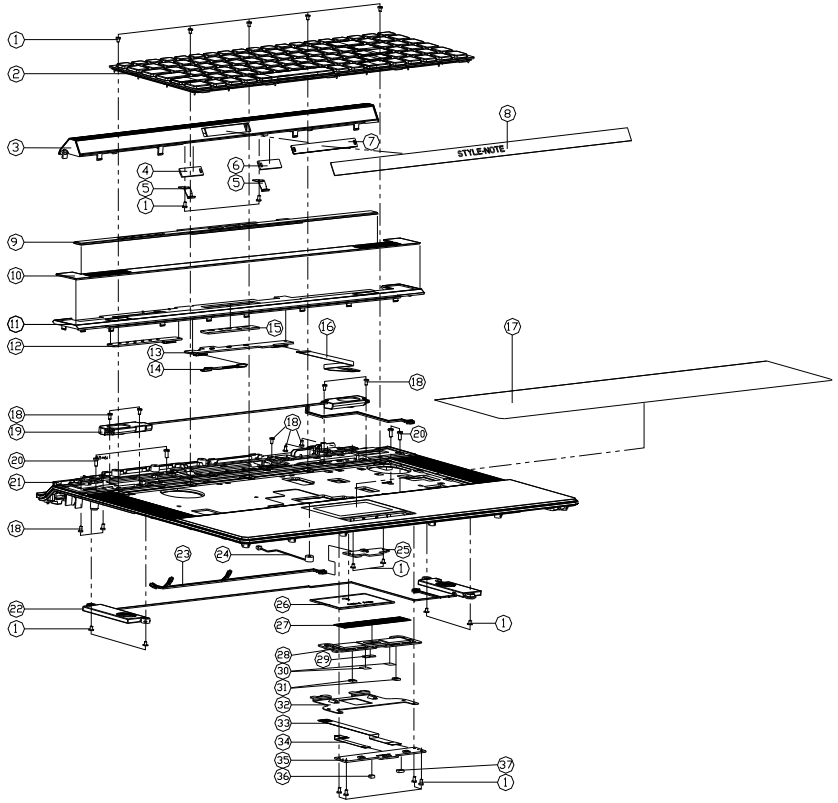


ITEM	PART NAME	PART NO	REMARK
1	SCREW M2*3L K1 NI ICT NY	6-35-B1120-3RA	
2	K/B UNIT FRAME ASS'Y	6-79-W980UJK-190	
3	HINGE COVER MODULE W870CU	6-42-W8702-301	
4	RIGHT-LOGO BOARD V30 W870CU	6-77-W8703-D03	
5	LOGO BOARD BRACKET SECC W870CU	6-33-W870S-010	
6	LEFT-LOGO BOARD V30 W870CU	6-77-W8705-D03	
7	LOGO LIGHT GUIDE PLATE	6-42-W8702-0C1	
8	LOGO PLATE	6-40-W8702-080	
9	LOGO PLATE	6-40-W8702-080-W	
9	TOP COVER ACRYLIC W870CU	6-42-W8702-011	
10	TOP COVER SUS430 W870CU	6-33-W8702-041	
11	TOP COVER MODULE W870CU	6-42-W8702-101	
12	LED BOARD V2.0A W870CU	6-77-W8704-D02A	
13	TOUCH SENSOR BOARD V30 W870CU	6-77-W870G-D03	
14	FFC CABLE FOR LENS BOARD 15PIN W870CU	6-43-W8700-041	
15	HOT KEY LENS ACRYLIC W870CU	6-42-W8702-070	
16	FFC CABLE 26PIN FOR HOTKEY W870CU	6-43-W8707-011	
17	TOP CASE PROTECT	6-40-W8702-061	
18	SCREW M2*4L K1 BZ ICT NY-	6-35-B6120-4RA	
19		6-23-5W870-021	
20	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
21	TOP CASE MODULE W870CU	6-39-W8702-011	
22		6-23-5W870-011	
23	CABLE FOR POWER BUTTON BOARD	6-43-W8700-011	
24	MIC CABLE L=179MM W870CU	6-43-W8705-011	
25	POWER BUTTON BOARD V2.0A W870CU	6-77-W870C-D02A	
26	TOUCH PAD TPA2U2VA998N2 W840T	6-49-W84T2-010	
27	FINGER BUTTON SUS304 L W870CU	6-33-W8702-031	
28	CLICK BUTTON FINGERPRINT	6-42-W8702-081	
29	RUBBER	6-47-W8702-040	
30	CLICK BUTTON MYLAR W870CU	6-40-W8702-090	
31	PORON FOR CLICK BUTTON W765S	6-47-W7652-010	
32	TP BRACKET SECC W870CU	6-33-W8702-011	
33	FFC CABLE FOR CLICK BOARD 10PIN W870CU	6-43-W8700-021	
34		6-43-M8600-030	
35		6-77-W860A-N02	
36	RUBBER	6-47-W8702-030	
37	FINGER BUTTON SUS304 R W870CU	6-33-W8702-021	
38	RUBBER 8.5*4.5*1.5 +SONY G9000 W870CU	6-47-W8702-020	

Figure A - 7
Top with Fingerprint (W870CU)

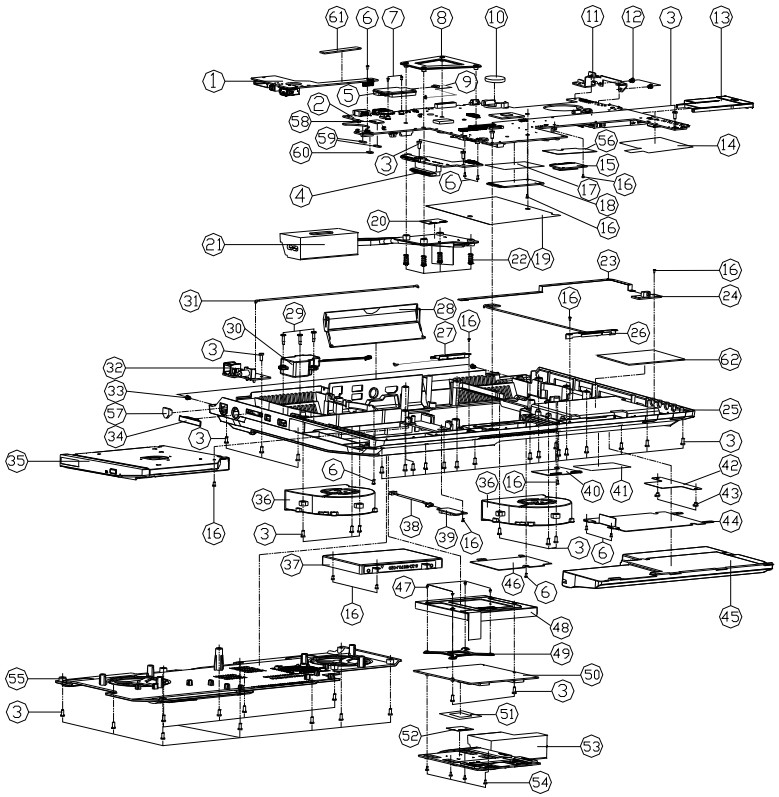
Top without Fingerprint (W870CU)

Figure A - 8
Top without Fingerprint (W870CU)



ITEM	PART NAME	PART NO	REMARK
1	SCREW M2*3L KI NI ICT NY	6-35-B1120-3RA	
2	K/B UK	6-79-W980NJUK-190	
3	HINGE COVER MODULE W870CU	6-42-W8702-301	
4	RIGHT-LOGO BOARD V3.0 W870CU	6-77-W8703-D03	
5	LOGO BOARD BRACKET SECC W870CU	6-33-W870S-010	
6	LEFT-LOGO BOARD V2.0A W870CU	6-77-W8705-D02A	
7	LOGO LIGHT GUIDE PLATE PC W870CU	6-42-W8702-0C1	
8	LOGO PLATE (STYLE-NOTE) ACRYLIC	6-40-W8702-080	
9	TOP COVER ACRYLIC W870CU	6-42-W8702-011	
10	TOP COVER SUS430 W870CU	6-33-W8702-041	
11	TOP COVER MODULE W870CU	6-42-W8702-101	
12	LED BOARD V2.0A W870CU	6-77-W8704-D02A	
13	TOUCH SENSOR BOARD V3.0 W870CU	6-77-W870G-D03	
14	FFC CABLE FOR LENS BOARD 15PIN W870CU	6-43-W8700-041	
15	HOT KEY LENS ACRYLIC W870CU	6-42-W8702-070	
16	FFC CABLE 26PIN FOR HOTKEY W870CU	6-43-W8707-011	
17	TOP CASE PROTECT	6-40-W8702-061	
18	SCREW M2*4L KI BZ ICT NY-	6-35-B6120-4RA	
19		6-23-5W870-021	
20	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
21	TOP CASE MODULE W870CU	6-39-W8702-011	
22		6-23-5W870-011	
23	CABLE FOR POWER BUTTON BOARD	6-43-W8700-011	
24	MIC CABLE L=179MM W870CU	6-43-W8705-011	
25	POWER BUTTON BOARD V2.0A W870CU	6-77-W870C-D02A	
26	TOUCH PAD TPA2U2VA998M2 W840T	6-49-W84T2-010	
27	CLICK BUTTON SUS304 W870CU	6-33-W8702-051	
28	CLICK BUTTON W/O FINGERPRINT	6-42-W8702-001	
29	RUBBER	6-47-W8702-040	
30	CLICK BUTTON MYLAR W870CU	6-40-W8702-090	
31	PORON FOR CLICK BUTTON W765S	6-47-W7652-010	
32	TP BRACKET SECC W870CU	6-33-W8702-011	
33	FFC CABLE FOR CLICK BOARD 10PIN W870CU	6-43-W8700-021	
34		6-43-M8600-030	
35	CLICK BOARD V3.0 W860CU	6-77-W8602-D03	
36	RUBBER	6-47-W8702-030	
37	RUBBER 85*45*15 +SONY G9000 W870CU	6-47-W8702-020	

Bottom (W870CU)

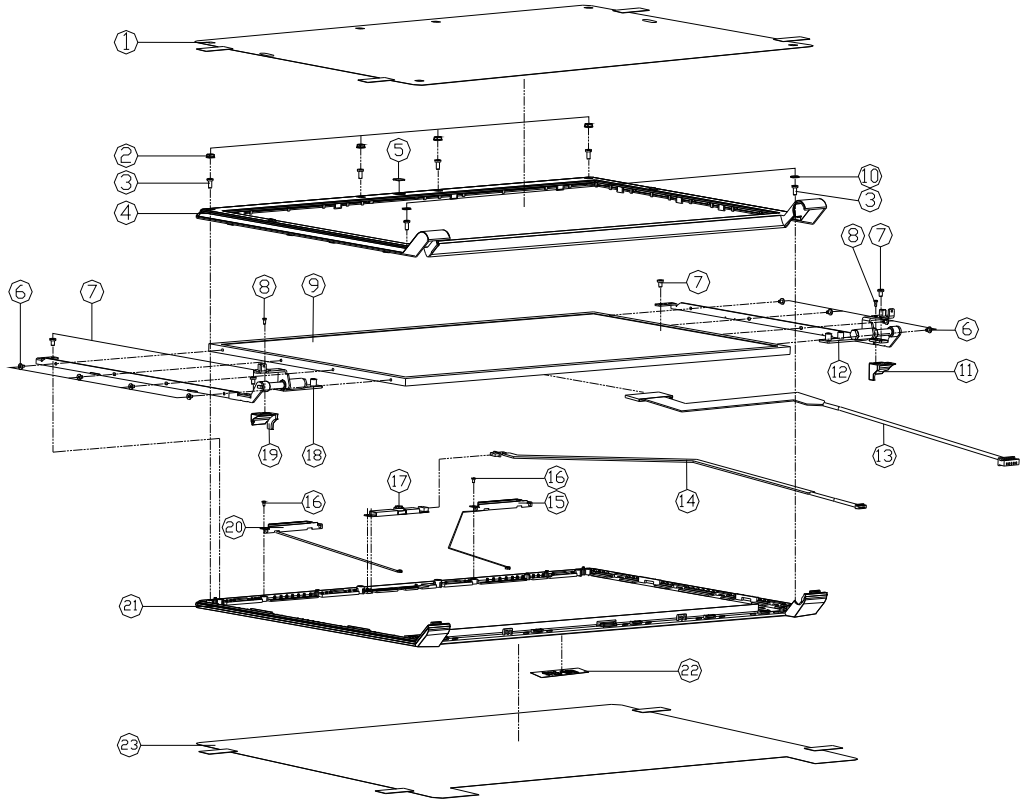


ITEM	PART NAME	PART NO	REMARK
1	MULTI I/O BOARD V2.0A W870CU	6-77-W8701-D02A	
2	MAIN BOARD V43A(w/O TPM) W870CU	6-77-W8700-D04-1	
3	SCREW M2.5*6L K BZ ICT NY	6-35-B2125-6RA	
4	SATA HDD & ODD BOARD V2.0 W870CU	6-77-W870N-D02	
5	[illegible]	6-88-L39TI-5301	(OPTION)
5	[illegible]	6-88-M76SI-B111	(OPTION)
6	SCREW M2*4L K1 BNI ICT NY	6-35-B9120-4RA	
7	[illegible]	6-35-B1120-3RE	
8	CPU SUPPORTER MODULE W/O 3 W860CU	6-33-W860S-101	
9	MODEM CABLE L=330MM W870CU	6-43-W870J-010	
10	BATTERY 3V 210MA CR2032 (NETSUBISHI)	6-23-62015-607	
11	DVI BRACKETSUS 430 1.0T) W870CU	6-33-W870S-021	
12	SCREW 4-40*5L K NI ACT NY	6-35-B1304-5R0	
13	DUMMY NEW CARD PC+ABS TH520R	6-42-T12R3-011	
14	NEW CARD MYLAR X30 FOR M/B TH520R	6-40-T12RS-010	
15	[illegible]	6-88-M735Z-4200	(OPTION)
15	[illegible]	6-88-W76CZ-7000	(OPTION)
16	SCREW M2*3L K1 NI ICT NY	6-35-B1120-3RA	
17	MYLAR 6A130(0.38MM)BLACK(USB SOCKET POSITION)	6-40-M66NS-040	
18	HYBRID TV TUNER NANO S/W M(TPM NOT INCLUDED)	6-88-D90F7-6501	(OPTION)
19	[illegible]	6-40-W860S-011	
20	[illegible]	6-48-W76C3-010	
21	CPU HEATSINK MODULE COPPER COIN FOR W870CU	6-31-W870N-101	(OPTION)
22	[illegible]	6-35-41125-9R5	
23	[illegible]	6-43-W8700-030	
24	CIR BOARD V2.0 W870CU	6-77-W870H-D02	
25	BOTTOM CASE MODULE FOR W870CU	6-39-W8703-011	
26	[illegible]	6-23-7W870-060	
27	[illegible]	6-23-7W870-040	
28	USB BOARDSABIS CM6(40 70)DW870CU	6-42-W8703-011	
29	[illegible]	6-35-Z0Z20-000	
30	[illegible]	6-23-5W870-030	
31	[illegible]	6-43-W870T-010	
32	RJ11 & TV BOARD V3.0 W870CU	6-77-W8706-D03	
33	SCREW M2*4L K1 BNZ ICT NYW35 t=0.4T	6-35-B6120-6RB	
34	[illegible]	6-47-M76S8-010	
35	SATA DVD SUPER MULTI(SSY OPTION) W870CU	6-79-W870CU0G-000	(OPTION)
35	SATA BLU-RAY COMBO ASSY OPTION) W870CU	6-79-W870CU0W-000	(OPTION)
36	FAN MODULE FOR W870CU	6-31-W870S-101	
37	W/O 2ND HDD ASS'Y W870CU	6-79-W870CU0J-000	
38	[illegible]	6-43-W870B-011	
39	[illegible]	6-88-M77C5-5300	(OPTION)
39	[illegible]	6-88-M73T5-3900	(OPTION)
40	[illegible]	6-33-W8601-031	
41	PRODUCT LABEL W870CU	6-45-W8703-010	
42	HOOK PULL MYLAR(MYLAR 0.125T) W870CU	6-40-W870J-010	
43	SCREW M3*2.5L K1 NI ICT NY	6-35-B1130-2R5	
44	HDD BRACKET MODULE W870CU	6-33-W870J-101	
45	[illegible]	6-87-W870S-421	
45	[illegible]	6-87-W870S-421A	
46	3G METAL COVER(SUS430) W870CU	6-33-W870G-011	
47	SCREW M1.4*2L D=3.2 T=0.4 K1 BZ ICT NY	6-35-B2116-2R0	
48	VGA BOTTOM SHIELDING MODULE W860CU	6-33-W8602-102	
49	VGA SUPPORTER SUS430 W860CU	6-33-W860S-030	
50	VGA BOARD N10M-NAE-GX1 BOM3 1GB/32M*32	6-77-N57NL-101-A	
51	VGA CHIP N10M-NAE-GX1 N10M-NAE-GX1 N10M-NAE-GX1	6-40-M86GS-080	
52	THERMAL PAD PSX (20+20+0.25)T	6-47-M86GB-020	
53	VGA HEATSINK MODULE COPPER COIN FOR W870CU	6-31-W870N-201	
54	SCREW M1.6*3L K1T=1.2 D=4.5) BZ ICT NY	6-35-B2116-3R5	
55	CPU COVER MODULE W870CU	6-42-W870S-101	
56	[illegible]	6-40-W860S-050	
57	RUBBER FOR MODEM (MOXY)/O MODEM W870S	6-47-M72SU-010	FOR W/O MODEM
58	RUBBER (5*4*2.5)MYLAR FOR W/O STIR W860CU	6-47-W860S-040	
59	PORON (20*8*3T,SM55) FOR M/B W860CU	6-47-W860S-060	
60	RUBBER(7*7*2T) FOR M/B W860CU	6-47-W860S-030	
61	PORON H48 (40*10*4.5T) FOR M/B W860CU	6-47-W860S-050	
62	PORON(90*40*1.5T) FOR BOTTOM CASE W860CU	6-47-W8603-020	

Figure A - 9
Bottom (W870CU)

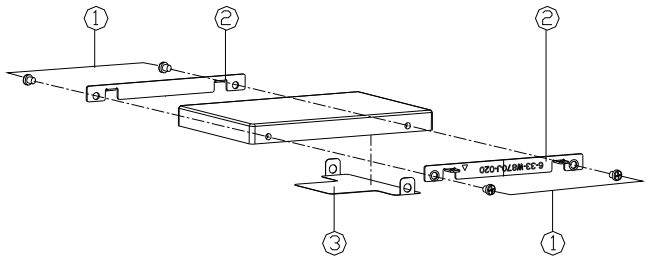
LCD (W870CU)

Figure A - 10
LCD (W870CU)



ITEM	PART NAME	PART NO	REMARK
1	FRONT CASE MYLAR FOR W870CU	6-40-W8701-020	
2	RUBBER (5*5*2.35) SILICON FRONT W870CU	6-47-W8701-010	
3	SCREW M2.5*6L K BZ ICT NY	6-35-82125-6RA	
4	LCD FRONT COVER MODULE W870CU	6-39-W8701-011	
5	CCD-LENS FOR W870CU	6-42-W870T-011	W/ CCD
5	W/O CCD LENS FOR W870CU	6-42-W870T-021	W/O CCD
6	SCREW M2*3L K1 BZ ICT NY (OD=4.5,BT=0.4)	6-35-B6120-3RD	
7	SCREW M2.5*4L K1 BK/O ICT NY	6-35-B4125-4RA	
8	SCREW M2*4L K1 BZ ICT NY	6-35-B6120-4RA	
9	LCD 17.3" HD+ AU B173RW01 V0 (GLARE TYPE)	6-50-NA160-G00	
9	LCD 17.3" FHD HANNSTAR HSD173PW1-A GLARE	6-50-NB258-N00	
9	LCD 17.3" HD+ CHIMEI N173HJE-L32 (GLARE TYPE)	6-50-NA158-D00	
10	RUBBER (5*5*0.5) SILICON FRONT W870CU	6-47-W8701-041	
11	COVER FOR HINGE R SABIC CN5A0 70DIE W870CU	6-42-W8701-051	
12	LCD HINGE R (SECC+SK7) FOR W870CU	6-33-W8701-011	
13	LCD CABLE LVDS L=260MM W870CU	6-43-W8701-011	
14	CABLE CCD 5P L=520MM W870CU	6-43-W870T-021	
15	ANTENNA WLAN 2.4G/5G,MFA W870CU	6-23-7W870-020	
16	SCREW M2*3L K1 BZ ICT NY (OD=4.5,BT=0.4)	6-35-B1120-3RD	
17	WVC CAMERA BISON FIX 3M,B2457-0D 2M W740T	6-88-M740C-4913	(OPTION)
18	LCD HINGE L (SECC+SK7) FOR W870CU	6-33-W8701-021	
19	COVER FOR HINGE L SABIC CN5A0 70DIE W870CU	6-42-W8701-041	
20	ANTENNA WLAN 2.4G/5G,MFA W870CU	6-23-7W870-030	
21	LCD BACK COVER MODULE W870CU	6-39-W8701-021	
22	SCREW M2.5*4L K1 BK/O ICT NY	6-45-M741S-020	
23	BACK CASE MYLAR FOR W870CU	6-40-W8701-010	

2nd HDD (W870CU)

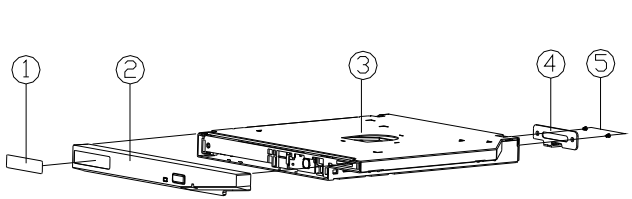


ITEM	PART NAME	PART NO	REMARK
1	SCREW M3×2.5L KI NI ICT NY -	6-35-B1130-2R5	
2	HDD2 BRACKET (SECC 0.8T) W870CU	6-33-W870J-020	
3	HDD2 PULL MYLAR(MYLAR 0.125T) W870CU	6-40-W870J-030	

Figure A - 11
2nd HDD (W870CU)

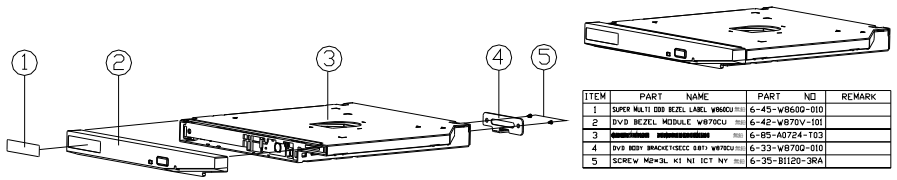
COMBO (W870CU)

Figure A - 12
COMBO (W870CU)



ITEM	PART NAME	PART NO	REMARK
1	BLU-RAY ODD BEZEL LABEL W860CU	6-45-W860W-010	
2	DVD BEZEL MODULE W870CU	6-42-W870V-101	
3	[illegible]	6-85-B074X-510	
3	[illegible]	6-85-B072X-P11	
3	[illegible]	6-85-B074X-511	
3	SATA BLU_RAY WRITER 5 1/4" 4X (MAX) 12.7MM	6-85-B074X-B20	
4	DVD BODY BRACKET(SECC 0.8T) W870CU	6-33-W8700-010	
5	SCREW M2*3L K1 NI ICT NY	6-35-B1120-3RA	

DVD-Dual Drive (W870CU)



ITEM	PART NAME	PART NO	REMARK
1	SUPER Multi DDR BEZEL LABEL W866CU	6-45-W8600-010	
2	DVD BEZEL MODULE W870CU	6-42-W870V-101	
3	[illegible]	6-85-A072X-103	
4	DVD BODY BRACKET(SECC 0.8T) W870CU	6-33-W870C-010	
5	SCREW M2*3L KI NI ICT NY	6-35-B120-3RA	

Figure A - 13
DVD-Dual Drive (W870CU)

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the ***W860CU/W870CU*** notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Diagram - Page	Diagram - Page	Diagram - Page
System Block Diagram - Page B - 2	*Clock Generator - Page B - 21*	*Power VCore - Page B - 40*
Processor 1/7 - Page B - 3	*Panel, Inverter - Page B - 22*	*AC_In, Charger - Page B - 41*
Processor 2/7 - Page B - 4	*DVI - Page B - 23*	*USB 3.0 - Page B - 42*
Processor 3/7 - Page B - 5	*HDMI - Page B - 24*	*Power Button Board - Page B - 43*
Processor 4/7 - Page B - 6	*MXM PCI-E - Page B - 25*	*LED Board - Page B - 44*
Processor 5/7 - Page B - 7	*EC-IT8502E - Page B - 26*	*Multi I/O Board - Page B - 45*
Processor 6/7 - Page B - 8	*USB, eSATA, New Card - Page B - 27*	*Touch Sensor Board - Page B - 46*
Processor 7/7 - Page B - 9	*Mini Card - Page B - 28*	*Left-LED Board - Page B - 47*
DDRIII SO-DIMM_0 - Page B - 10	*BT, TPM, MDC, LID - Page B - 29*	*Fingerprint Board - Page B - 48*
DDRIII SO-DIMM_1 - Page B - 11	*LAN, RTL8111L, RJ45 - Page B - 30*	*Click Board - Page B - 49*
IBEXPEAK - M 1/9 - Page B - 12	*Fan, CCD, LED, Screw Hole - Page B - 31*	*W870CU Second HDD Board - Page B - 50*
IBEXPEAK - M 2/9 - Page B - 13	*Azalia Codec ALC888 - Page B - 32*	*W870CU Multi I/O Board - Page B - 51*
IBEXPEAK - M 3/9 - Page B - 14	*SRS-AP8202, SATA ODD & HDD - Page B - 33*	*W870CU CIR Board - Page B - 52*
IBEXPEAK - M 4/9 - Page B - 15	*AMP-TPA6017, Subwoofer - Page B - 34*	*W870CU LED Board - Page B - 53*
IBEXPEAK - M 5/9 - Page B - 16	*5V, 3.3V, 3.3VS, 5VS, 1.5VS - Page B - 35*	*W870CU RJ11 & TV Board - Page B - 54*
IBEXPEAK - M 6/9 - Page B - 17	*VDD3, VDD5 - Page B - 36*	*W870CU Power Button Board - Page B - 55*
IBEXPEAK - M 7/9 - Page B - 18	*Power 1.8VS, 1.1VS - Page B - 37*	*W870CU Right-Logo Board - Page B - 56*
IBEXPEAK - M 8/9 - Page B - 19	*Power 1.5V/0.75V - Page B - 38*	*W870CU Left-Logo Board - Page B - 57*
IBEXPEAK - M 9/9 - Page B - 20	*Power 1.1VS_VTT - Page B - 39*	*W870CU Touch Sensor Board - Page B - 58*

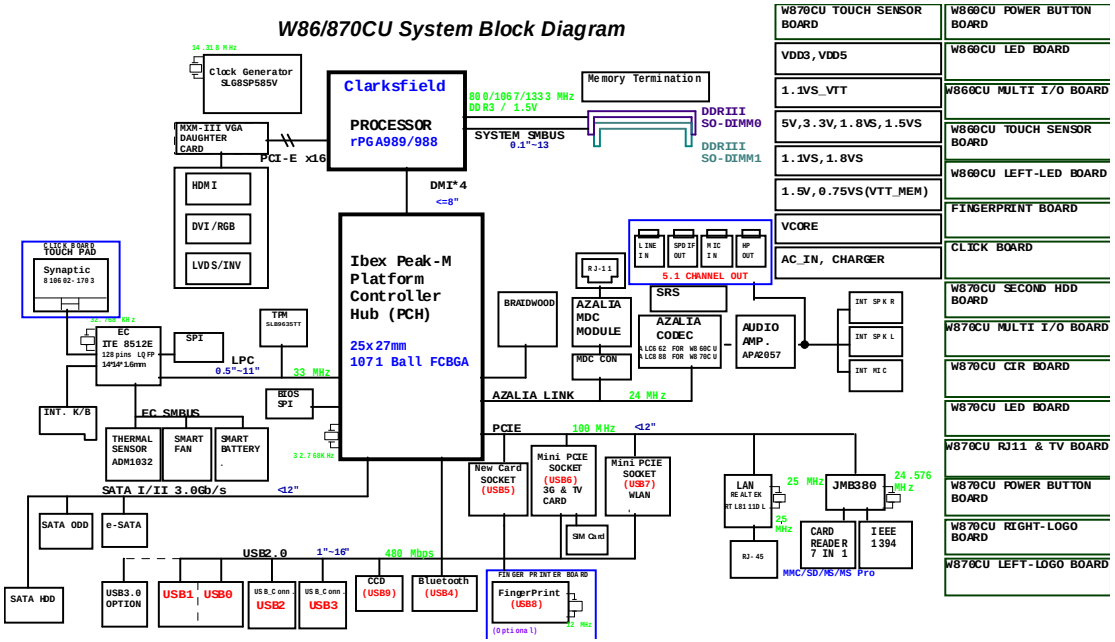
Table B - 1
Schematic Diagrams

Version Note

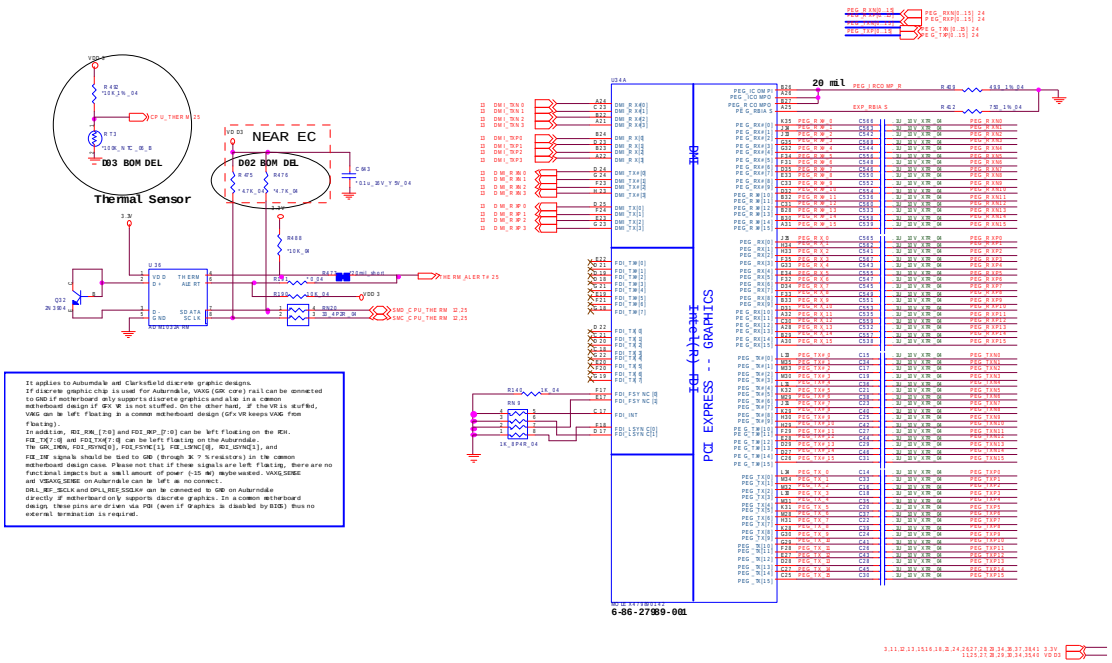
The schematic diagrams in this chapter are based upon version 6-7P-W860H-007. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

Sheet 1 of 57
System Block Diagram



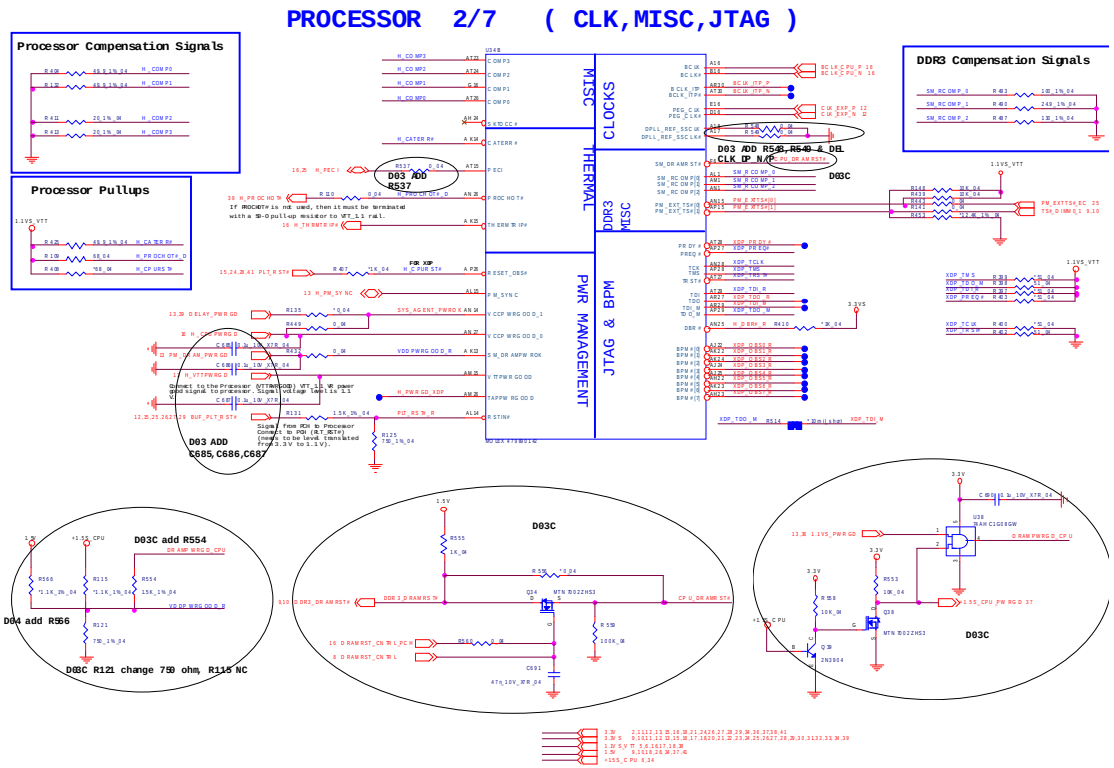
Processor 1/7



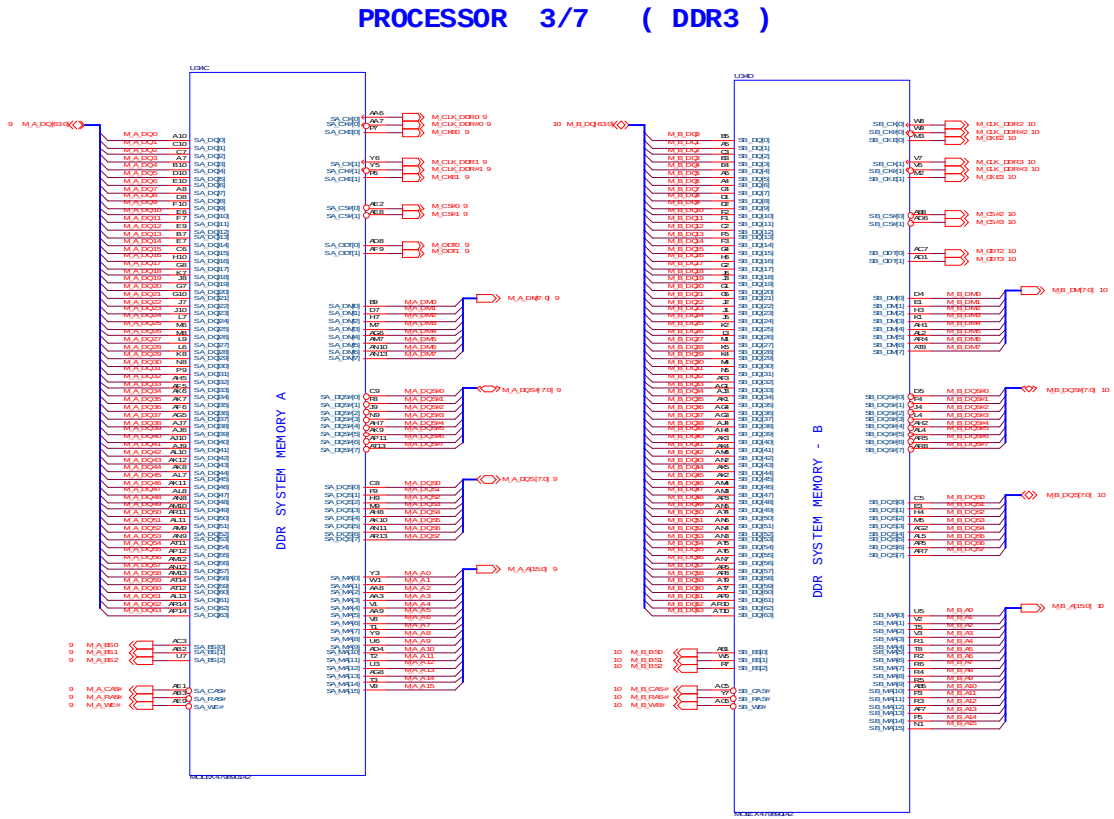
Sheet 2 of 57
Processor 1/7

Processor 2/7

Sheet 3 of 57
Processor 2/7



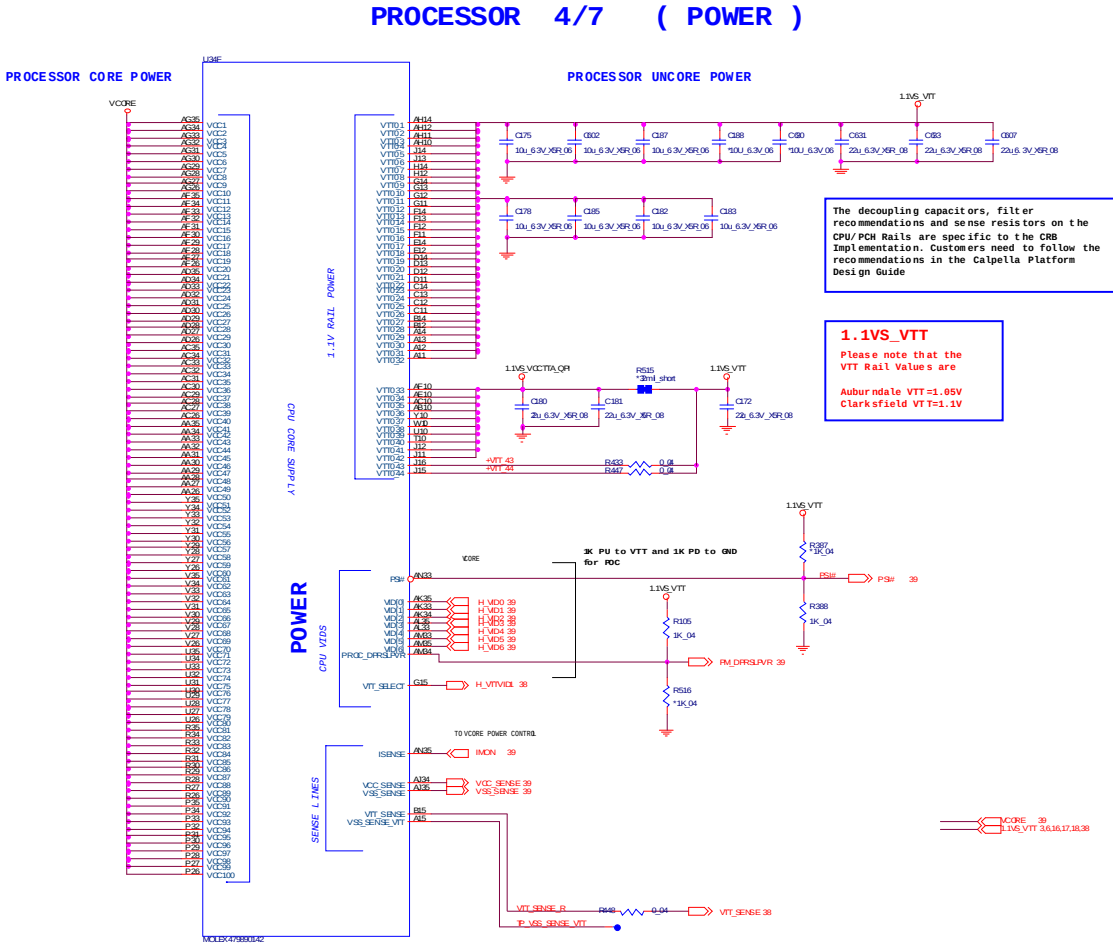
Processor 3/7



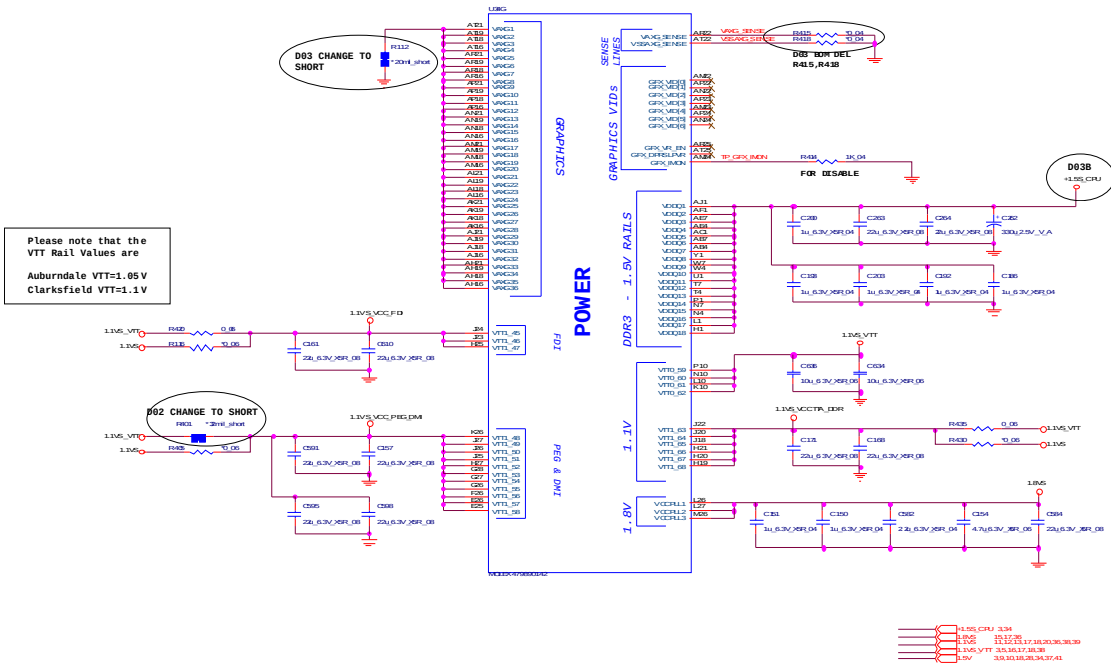
Sheet 4 of 57
Processor 3/7

Processor 4/7

Sheet 5 of 57
Processor 4/7


PROCESSOR 4/7 (POWER)
PROCESSOR CORE POWER
PROCESSOR UNCORE POWER
POWER
1.1V RAIL POWER
CPU CORE SUPPLY
CPU VIDS
SENSE LINES
The decoupling capacitors, filter recommendations and sense resistors on the CPU/PCH Rails are specific to the CRB Implementation. Customers need to follow the recommendations in the Calpella Platform Design Guide
1.1VS_VTT
Please note that the VTT Rail Values are
Auburndale VTT=1.05V
Clarksfield VTT=1.1V
3K PU to VTT and 1K PD to GND for PDC
TO VCORE POWER CONTROL

Processor 5/7

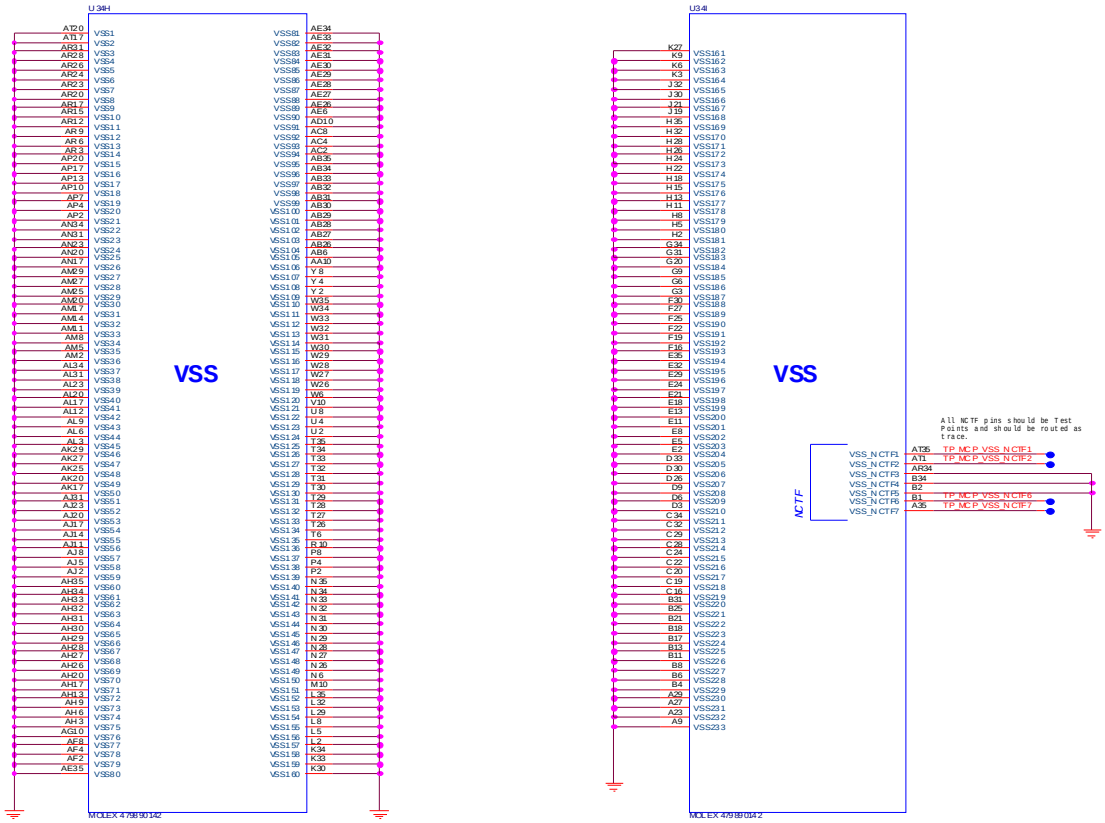


Sheet 6 of 57
Processor 5/7

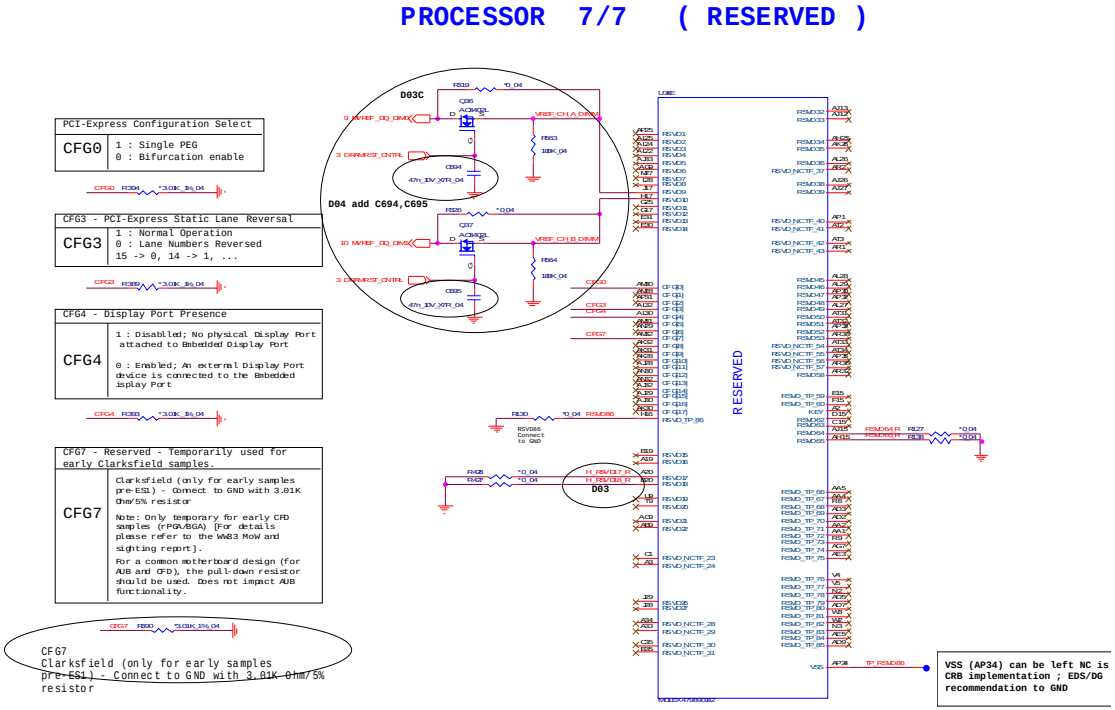
Processor 6/7

Sheet 7 of 57
Processor 6/7

PROCESSOR 6/7 (GND)



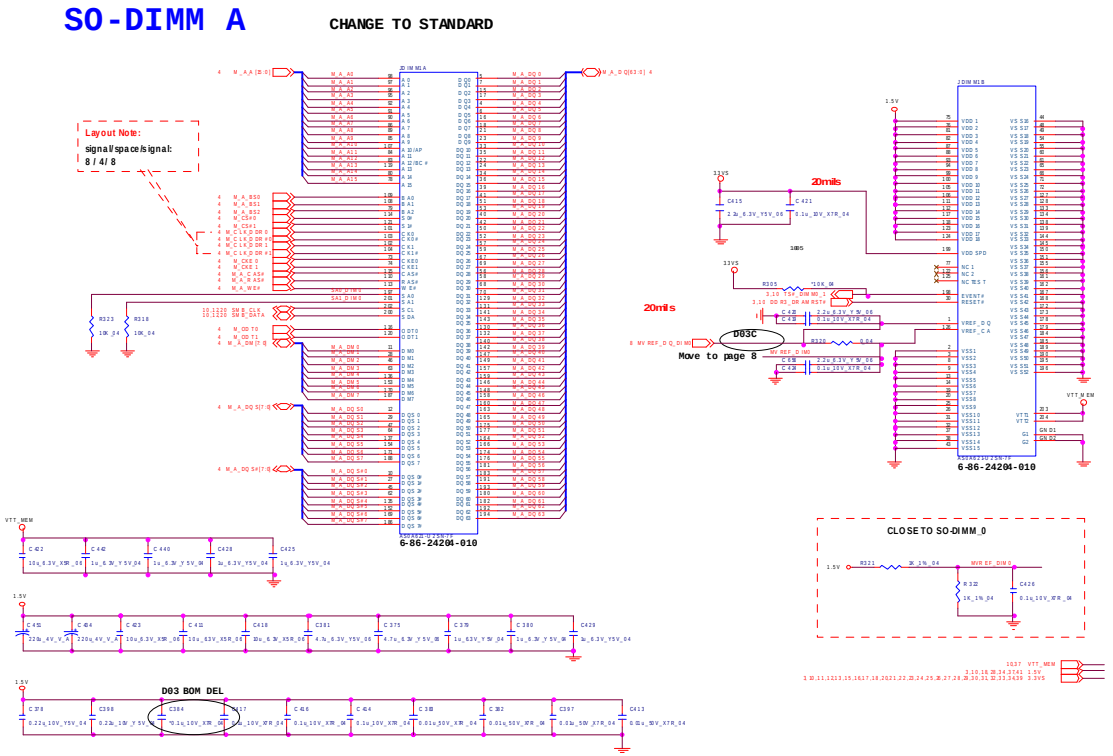
Processor 7/7


PROCESSOR 7/7 (RESERVED)
PCI-Express Configuration Select
CFG0
1 : Single PEG
0 : Bifurcation enable
CFG3 - PCI-Express Static Lane Reversal
CFG3
1 : Normal Operation
0 : Lane Numbers Reversed
15 -> 0, 14 -> 1, ...
CFG4 - Display Port Presence
CFG4
1 : Disabled; No physical Display Port attached to Embedded Display Port
0 : Enabled; An external Display Port device is connected to the Embedded isplay Port
CFG7 - Reserved - Temporarily used for early Clarksfield samples.
CFG7
Clarksfield (only for early samples pre-ES1) - Connect to GND with 3.01K Ohm/5% resistor
Note: Only temporary for early CFD samples (rPGA,BGA) [For details please refer to the WW83 MoW and sighting report].
For a common motherboard design (for AUB and CFD), the pull-down resistor should be used. Does not impact AUB functionality.
CFG7
Clarksfield (only for early samples pre-ES1) - Connect to GND with 3.01K 1%/5% resistor
D03C
D04 add C694,C695
D03
RESERVED
VSS (AP34) can be left NC is CRB implementation ; EDS/DG recommendation to GND

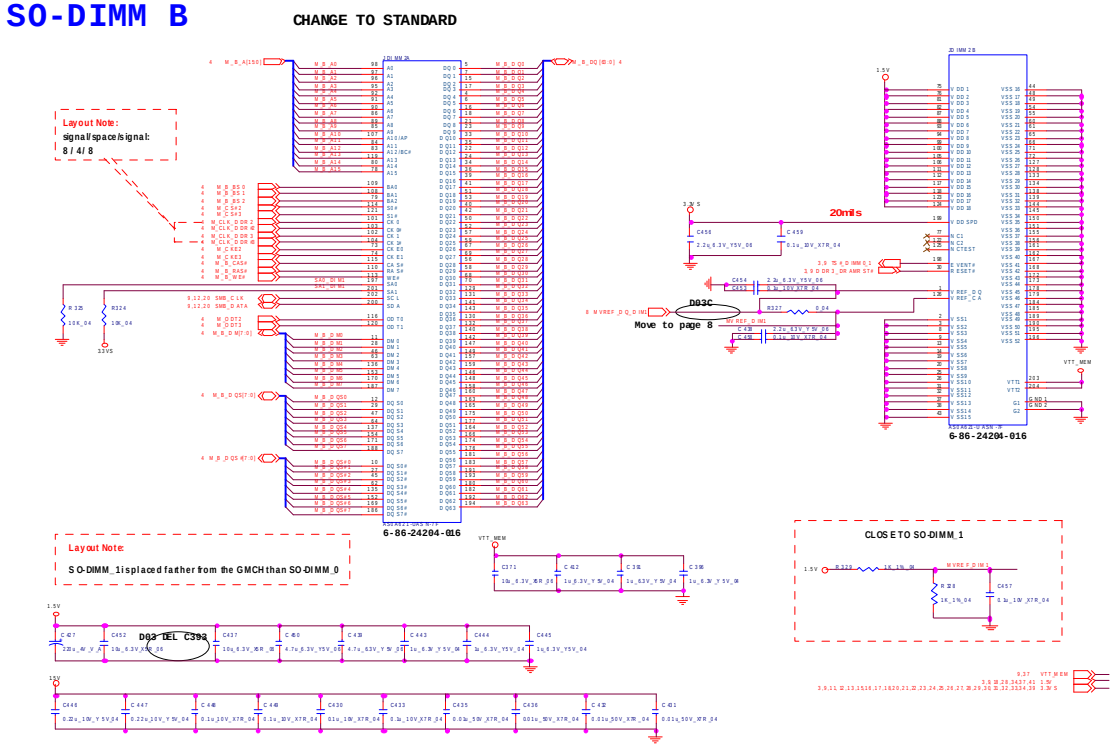
Sheet 8 of 57
Processor 7/7

DDRIII SO-DIMM_0

Sheet 9 of 57
DDRIII SO-DIMM _0



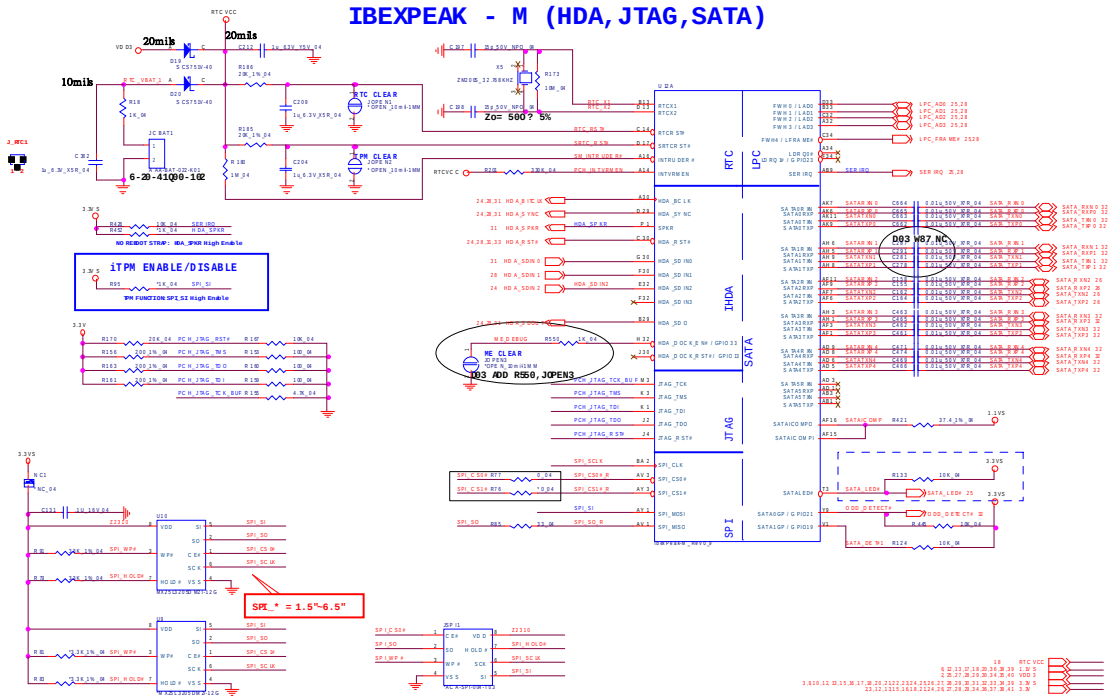
DDRIII SO-DIMM_1



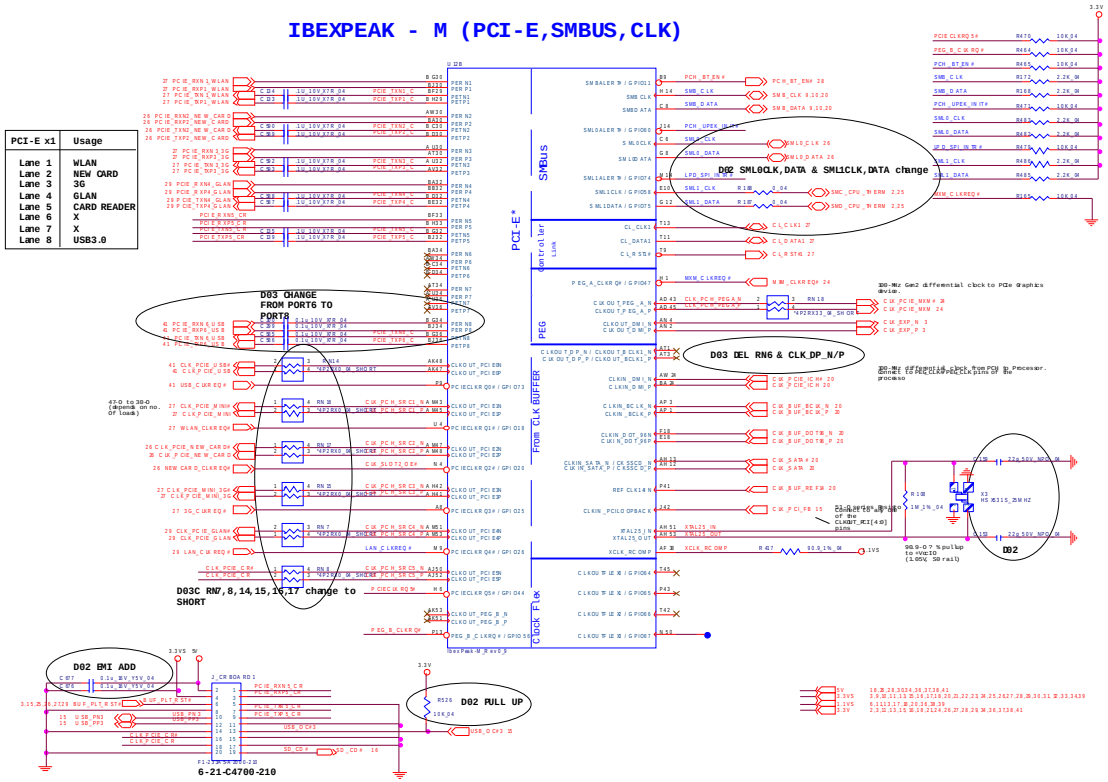
Sheet 10 of 57
DDRIII SO-DIMM _1

IBEXPEAK - M 1/9

Sheet 11 of 57
IBEXPEAK - M 1/9



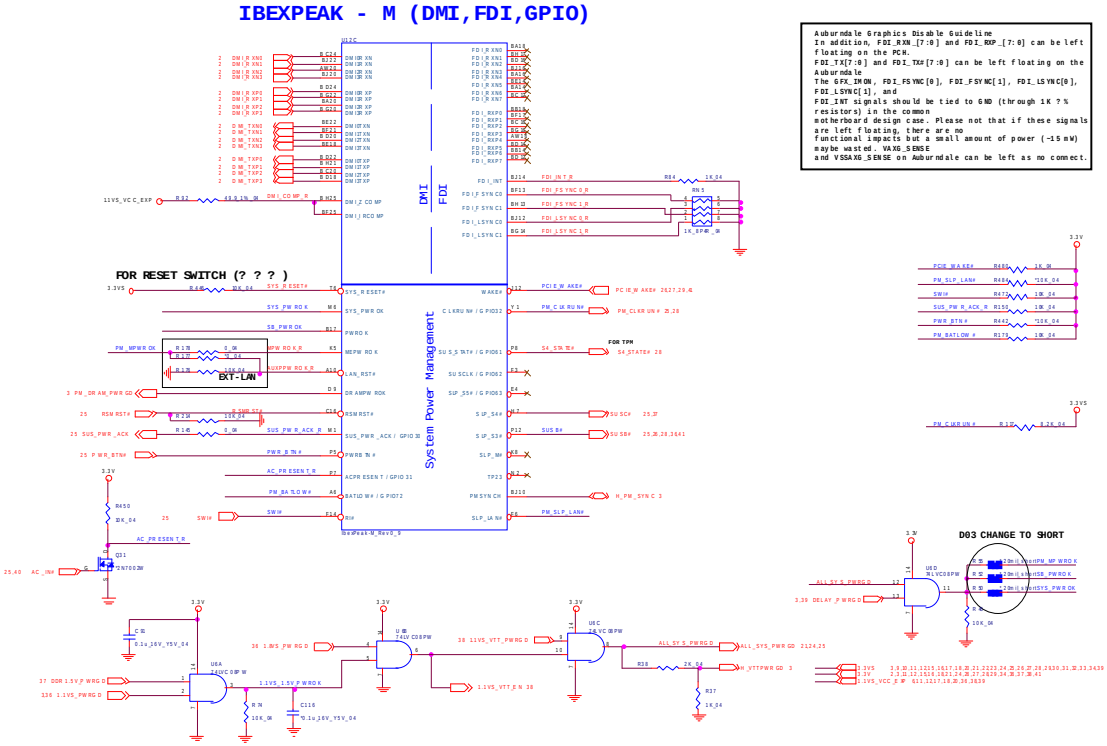
IBEXPEAK - M 2/9


IBEXPEAK - M (PCI-E,SMBUS,CLK)
PCI-E x1 | Usage
Lane 1 | WLAN
Lane 2 | NEW CARD
Lane 3 | 3G
Lane 4 | GLAN
Lane 5 | CARD READER
Lane 6 | X
Lane 7 | X
Lane 8 | USB3.0
D03 CHANGE FROM PORT6 TO PORT8
D03C RN7,8,14,15,16,17 change to SHORT
D02 SML0CLK,DATA & SML1CLK,DATA change
D03 DEL RN6 & CLK_DP_N/P
D02 EMI ADD
D02 PULL UP
6-21-C4700-210

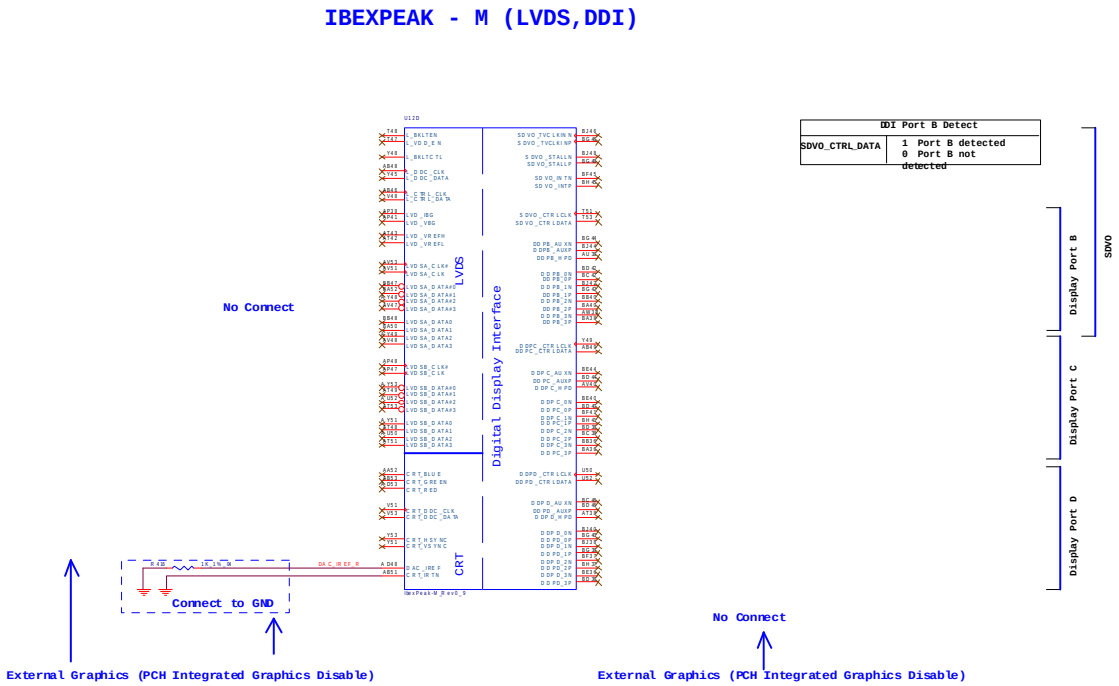
Sheet 12 of 57
IBEXPEAK - M 2/9

IBEXPEAK - M 3/9

Sheet 13 of 57
IBEXPEAK - M 3/9



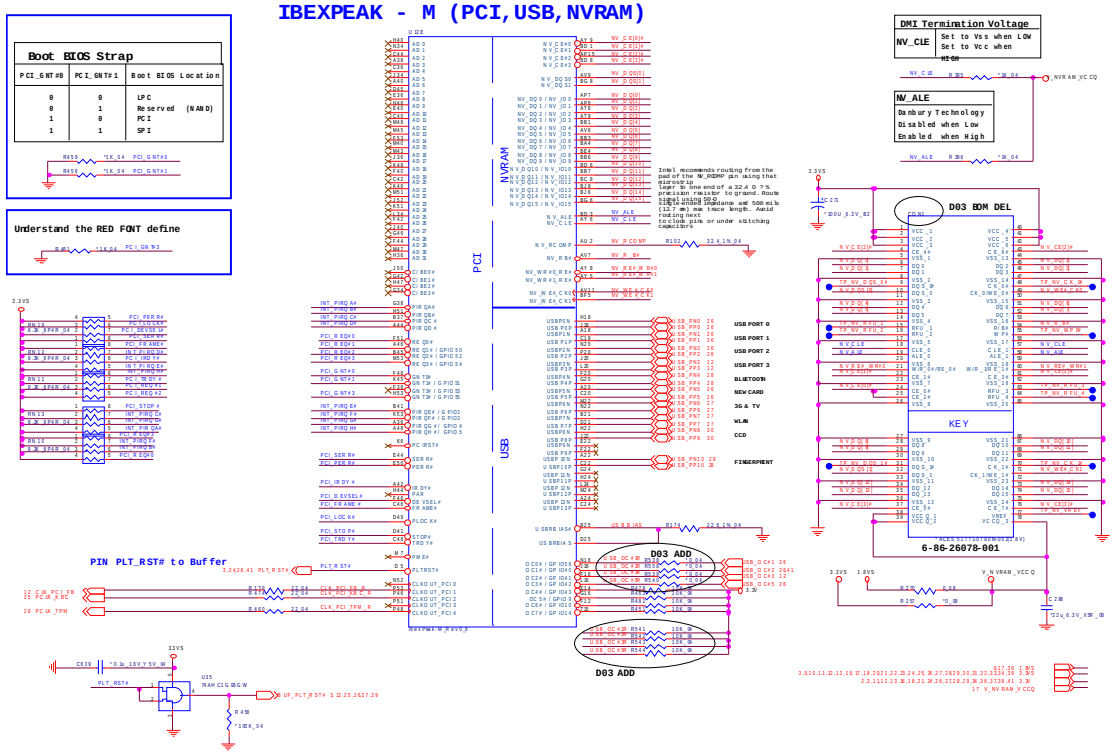
IBEXPEAK - M 4/9



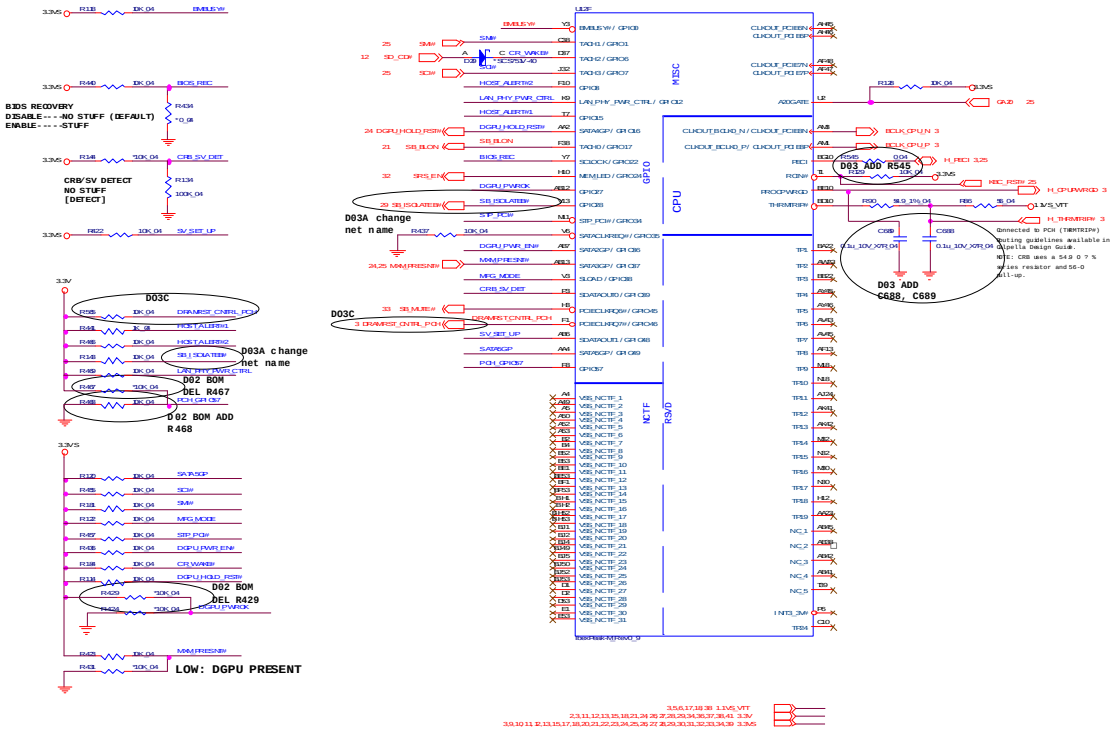
Sheet 14 of 57
IBEXPEAK - M 4/9

IBEXPEAK - M 5/9

Sheet 15 of 57
IBEXPEAK - M 5/9



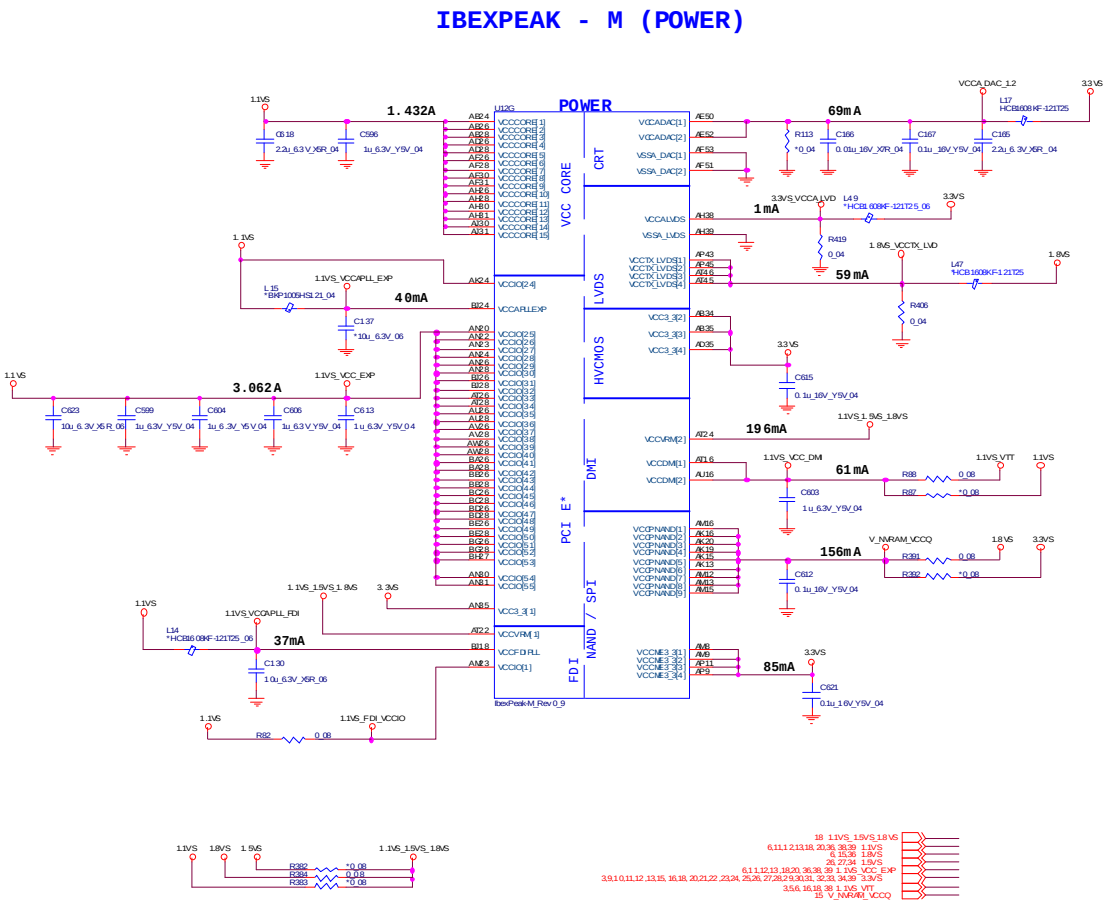
IBEXPEAK - M 6/9



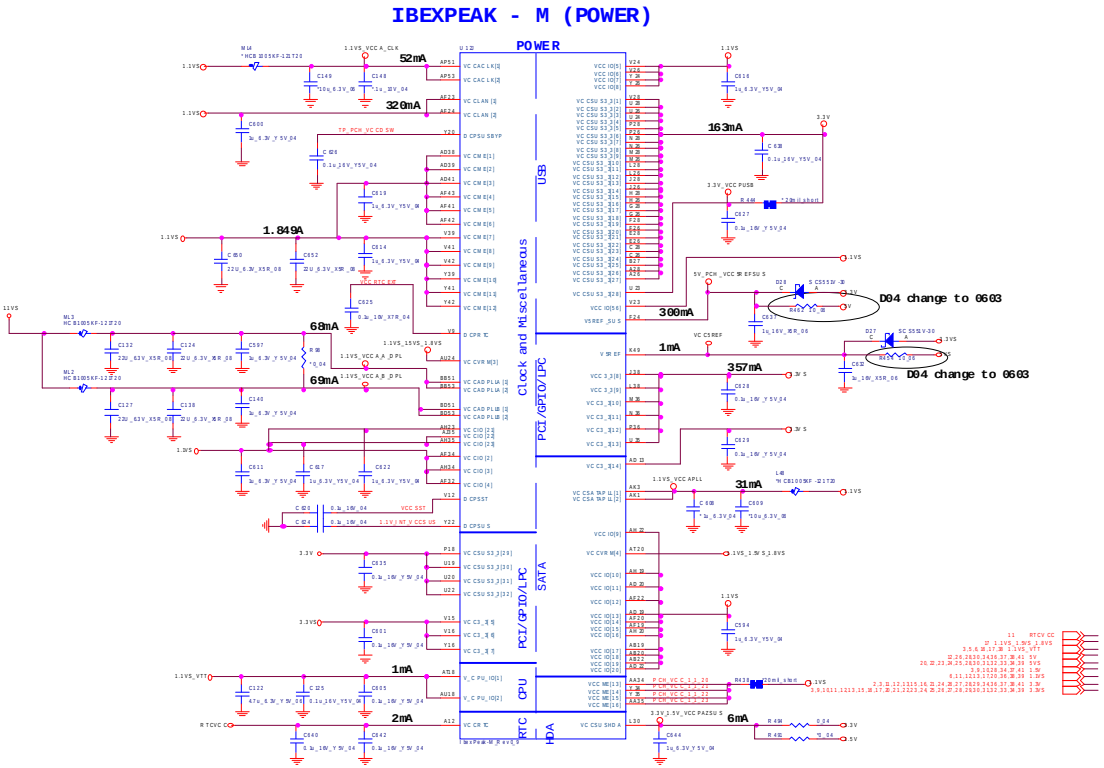
Sheet 16 of 57
IBEXPEAK - M 6/9

IBEXPEAK - M 7/9

Sheet 17 of 57
IBEXPEAK - M 7/9



IBEXPEAK - M 8/9



Sheet 18 of 57
IBEXPEAK - M 8/9

IBEXPEAK - M 9/9

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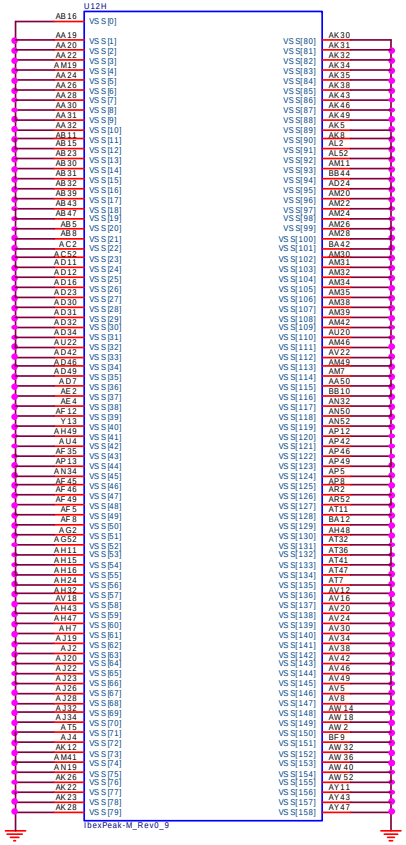
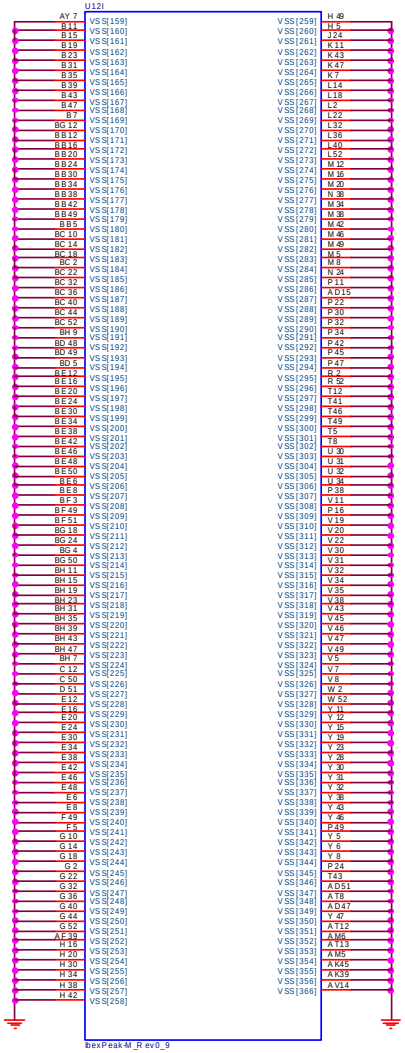
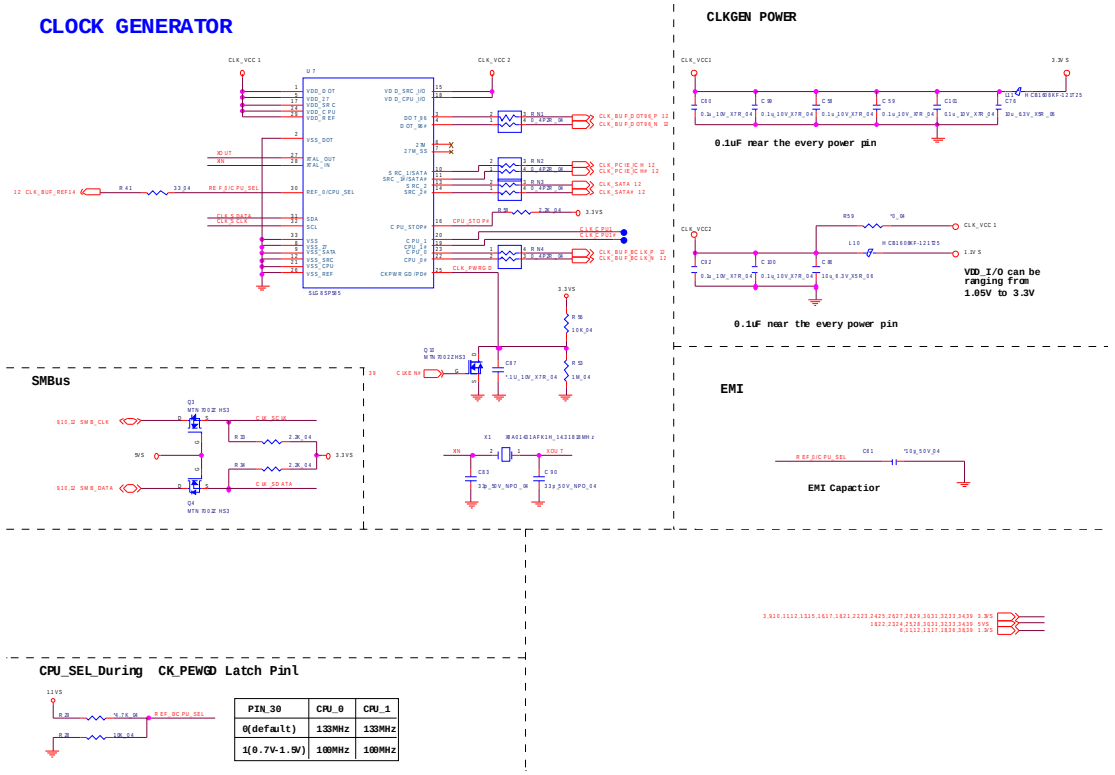
IBEXPEAK - M 9/9

IBEXPEAK - M (GND)





Clock Generator

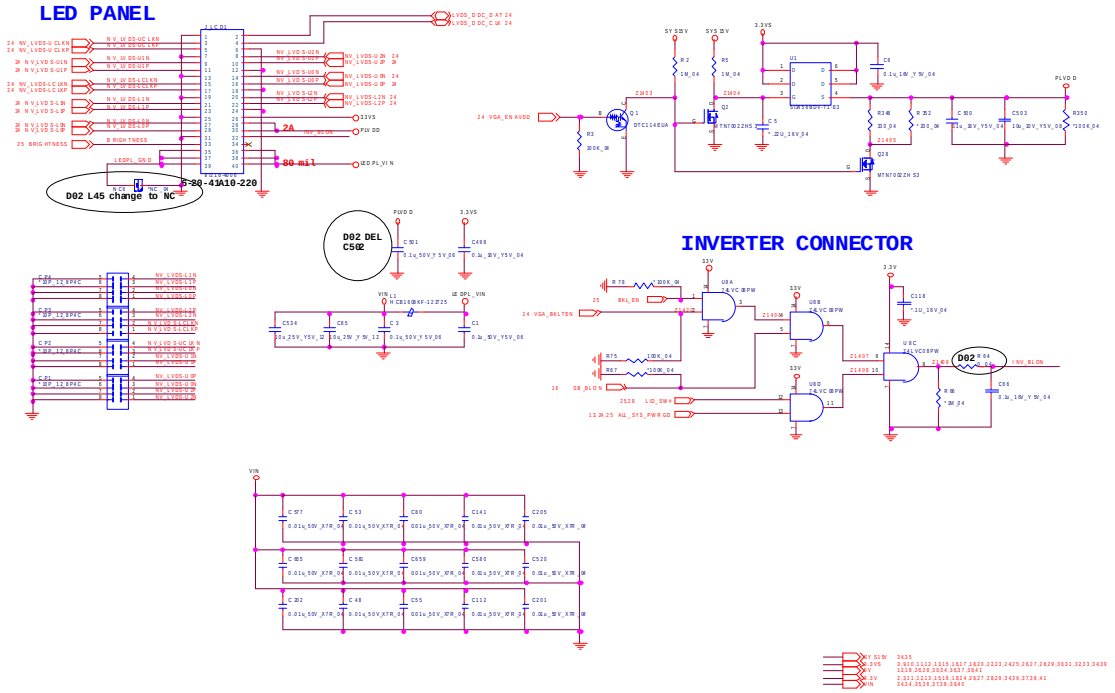


PIN_30	CPU_0	CPU_1
0(default)	133MHz	133MHz
1(0.7V-1.5V)	100MHz	100MHz

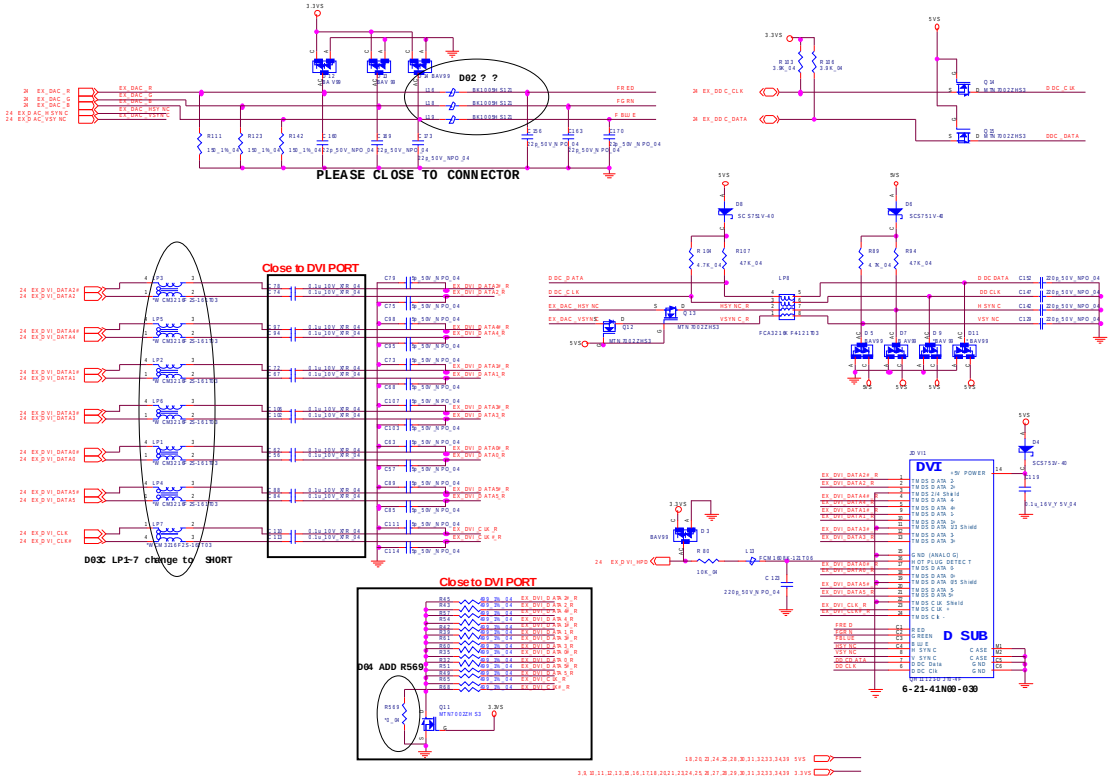
Sheet 20 of 57
Clock Generator

Panel, Inverter

Sheet 21 of 57
Panel, Inverter



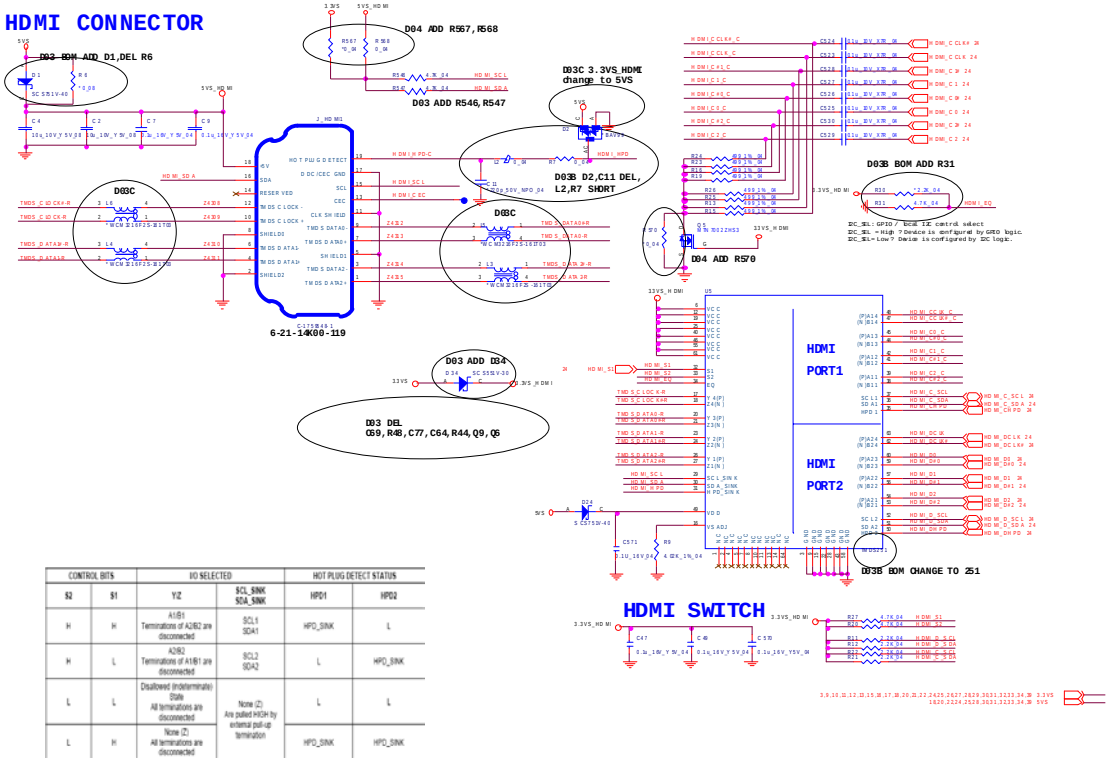
DVI



Sheet 22 of 57
DVI

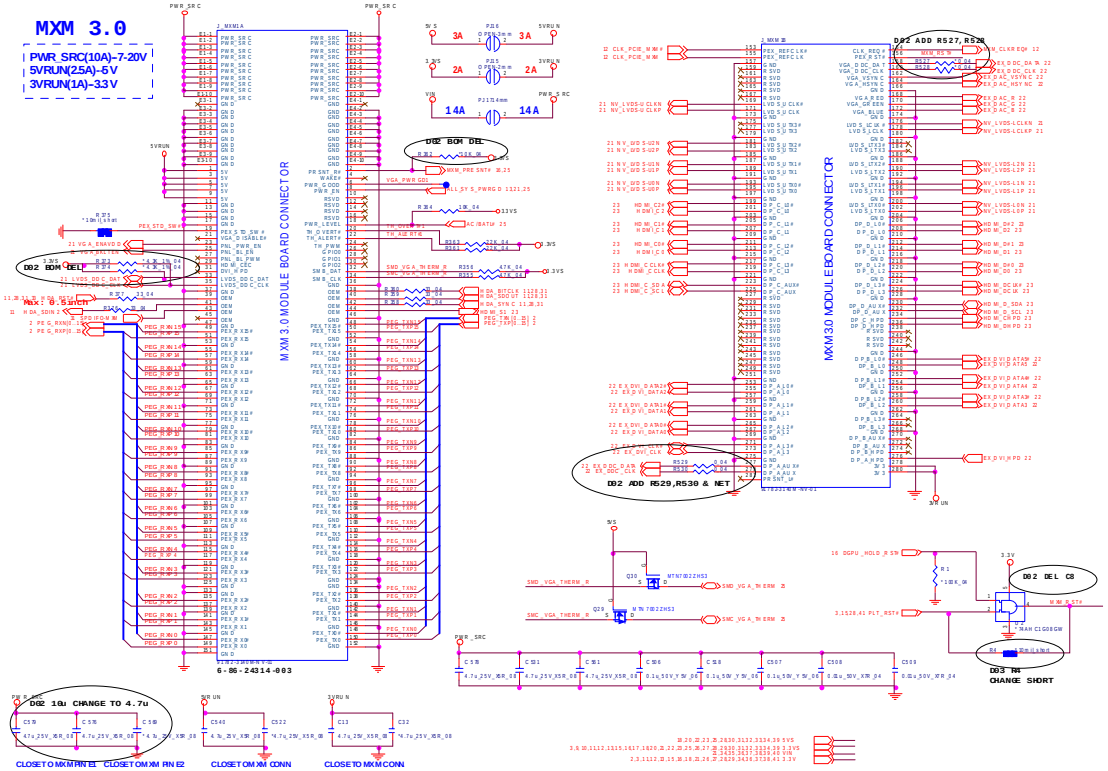
HDMI

Sheet 23 of 57
HDMI



CONTROL BITS		I/O SELECTED		HOT PLUG DETECT STATUS	
S2	S1	YZ	SCL_SINK SDA_SINK	HPD1	HPD2
H	H	A1/B1 Terminations of A2/B2 are disconnected	SCL1 SDA1	HPD_SINK	L
H	L	A2/B2 Terminations of A1/B1 are disconnected	SCL2 SDA2	L	HPD_SINK
L	L	Disallowed (indeterminate) State All terminations are disconnected	None (Z) Are pulled HIGH by external pull-up termination	L	L
L	H	None (Z) All terminations are disconnected		HPD_SINK	HPD_SINK

MXM PCI-E



Sheet 24 of 57
MXM PCI-E

EC-IT8502E

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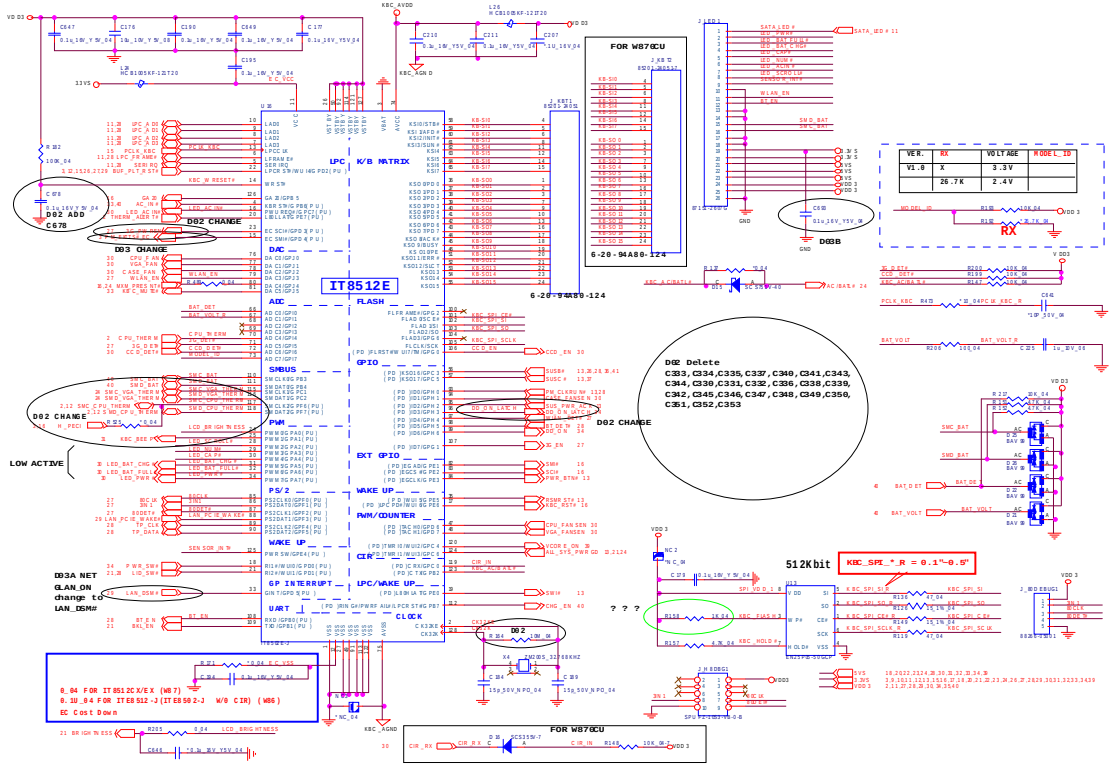
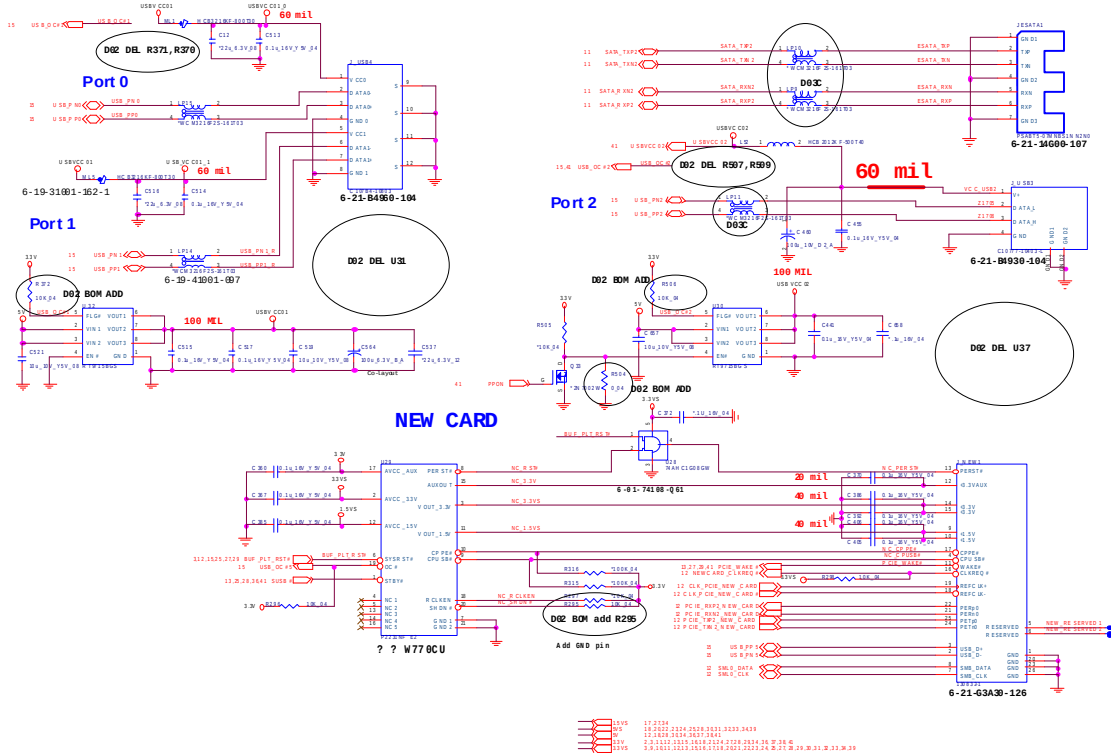
EC-IT8502E



USB, eSATA, New Card



Sheet 26 of 57
USB, eSATA,
New Card

B.Schematic Diagrams

Mini Card

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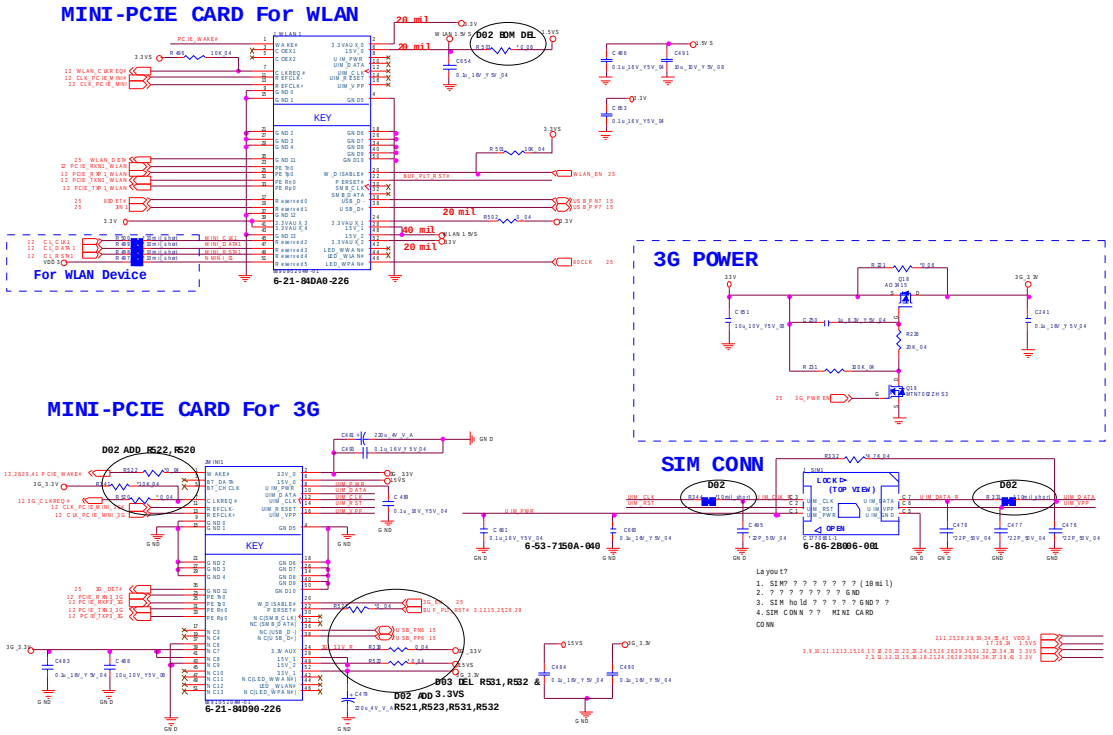
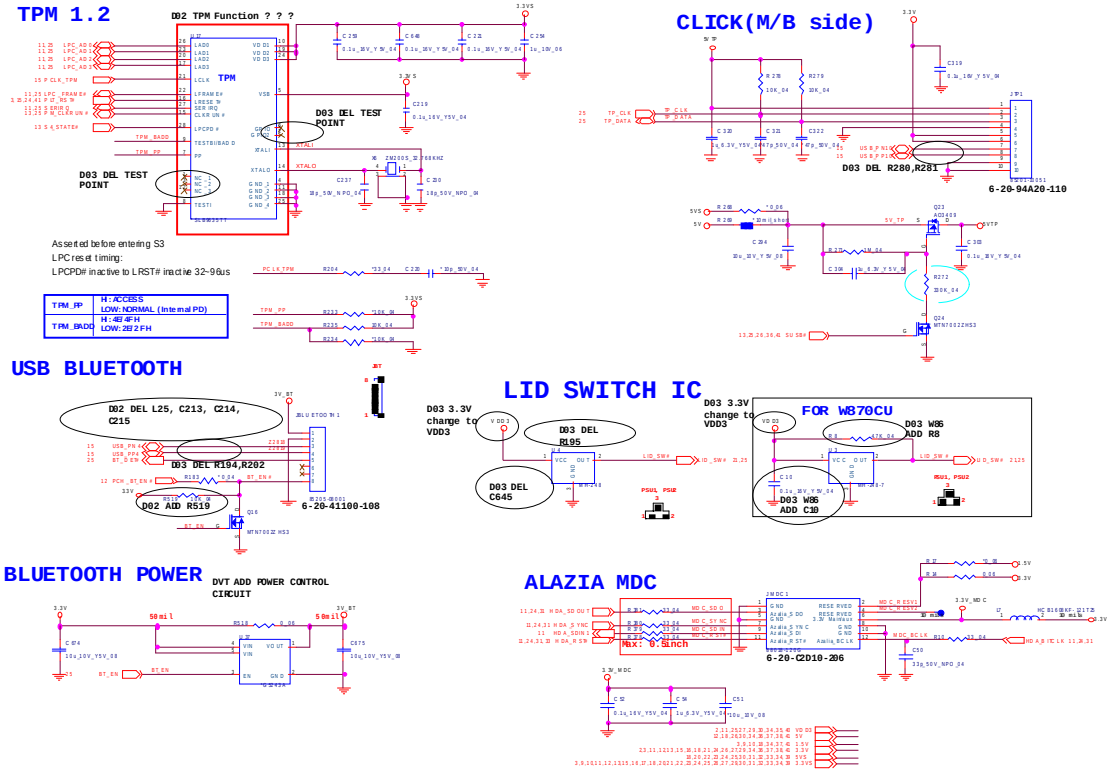
Mini Card



BT, TPM, MDC, LID



Sheet 28 of 57
BT, TPM, MDC, LID

LAN, RTL8111L, RJ45

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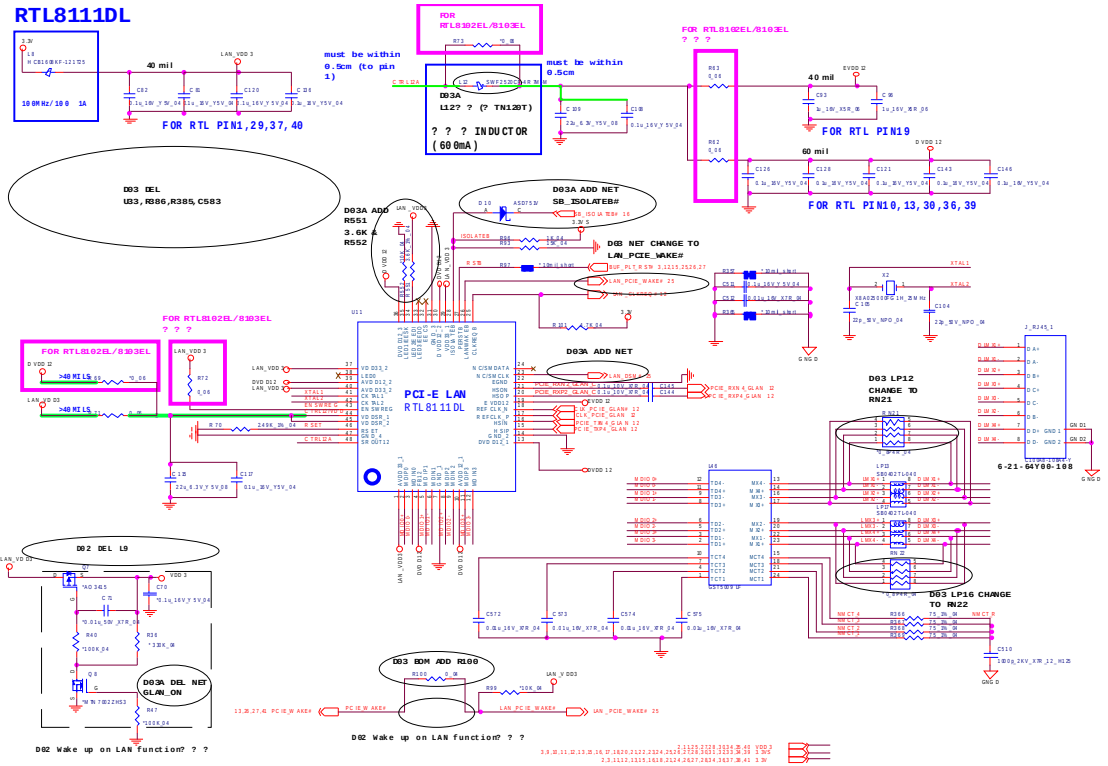
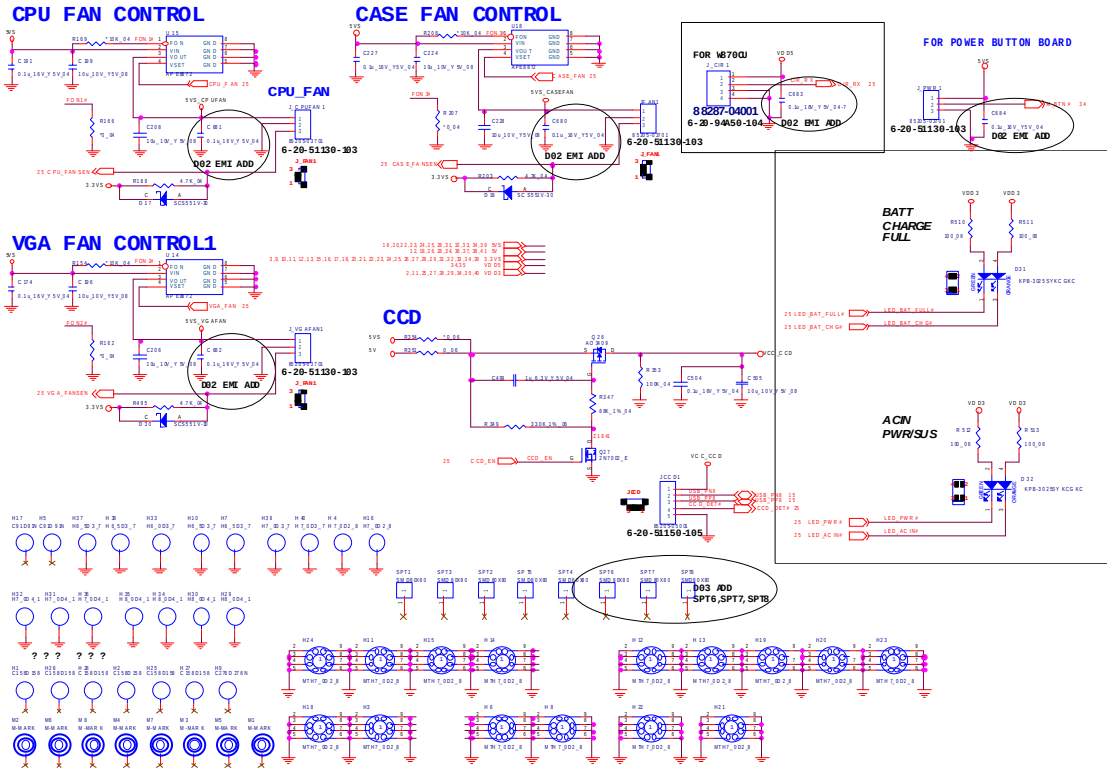
LAN-RTL8111DL,
RJ45


RTL8111DL
must be within 0.5cm (to pin 1)
FOR RTL PIN1,29,37,40
FOR RTL8102EL/8103EL
must be within 0.5cm
D03A L12? ? (? TN120T)
? ? ? INDUCTOR (600mA)
FOR RTL8102EL/8103EL ? ? ?
40 mil
FOR RTL PIN19
60 mil
FOR RTL PIN10,13,30,36,39
D03 DEL U33,R886,R385,C583
D03A ADD R551 3.6K R552
D03A ADD NET SB_ISOLATE#
D03 NET CHANGE TO LAN_PCIE_WAKE#
FOR RTL8102EL/8103EL ? ? ?
PCI-E LAN RTL8111DL
D03A ADD NET
D03 LP12 CHANGE TO RN21
D03 LP16 CHANGE TO RN22
6-21-64Y00-108
D02 DEL L9
D03A DEL NET GLAN_ON
D02 Wake up on LAN function? ? ?
D03 ADD R100
D02 Wake up on LAN function? ? ?

Fan, CCD, LED, Screw Hole



Sheet 30 of 57
Fan, CCD, LED, Screw Hole

Azalia Codec ALC888

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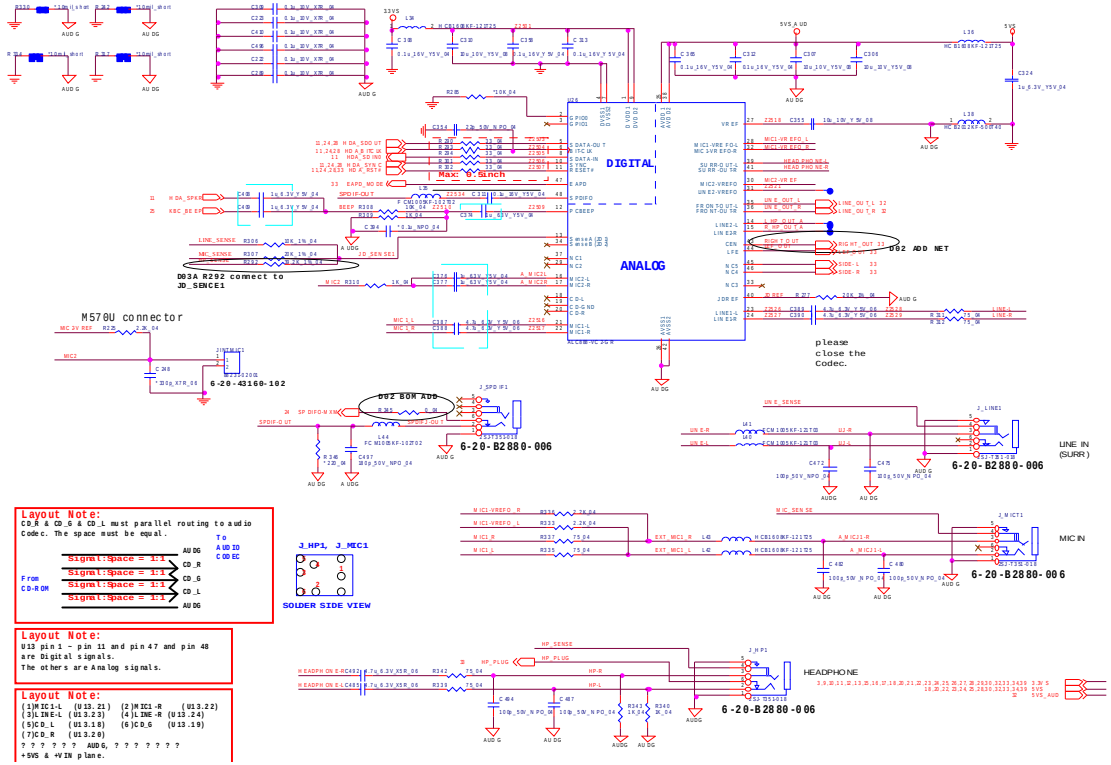
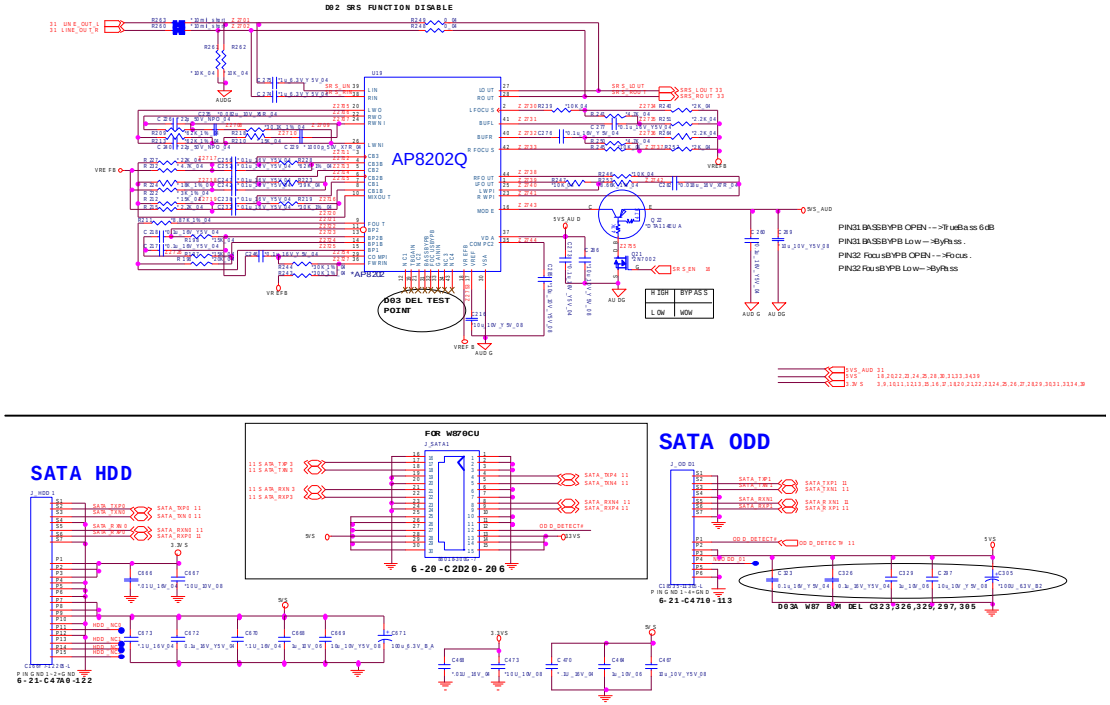
Azalia Codec
ALC888



SRS-AP8202, SATA ODD & HDD



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SRS-AP8202,
SATA ODD & HDD

AMP-TPA6017, Subwoofer

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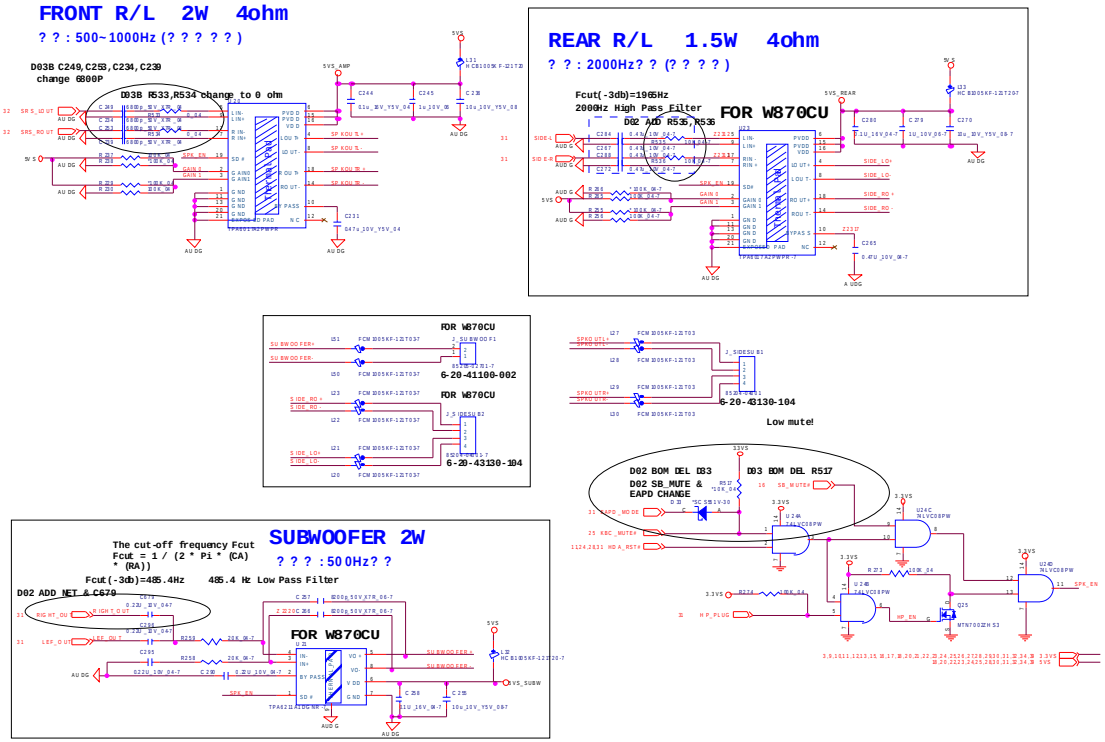
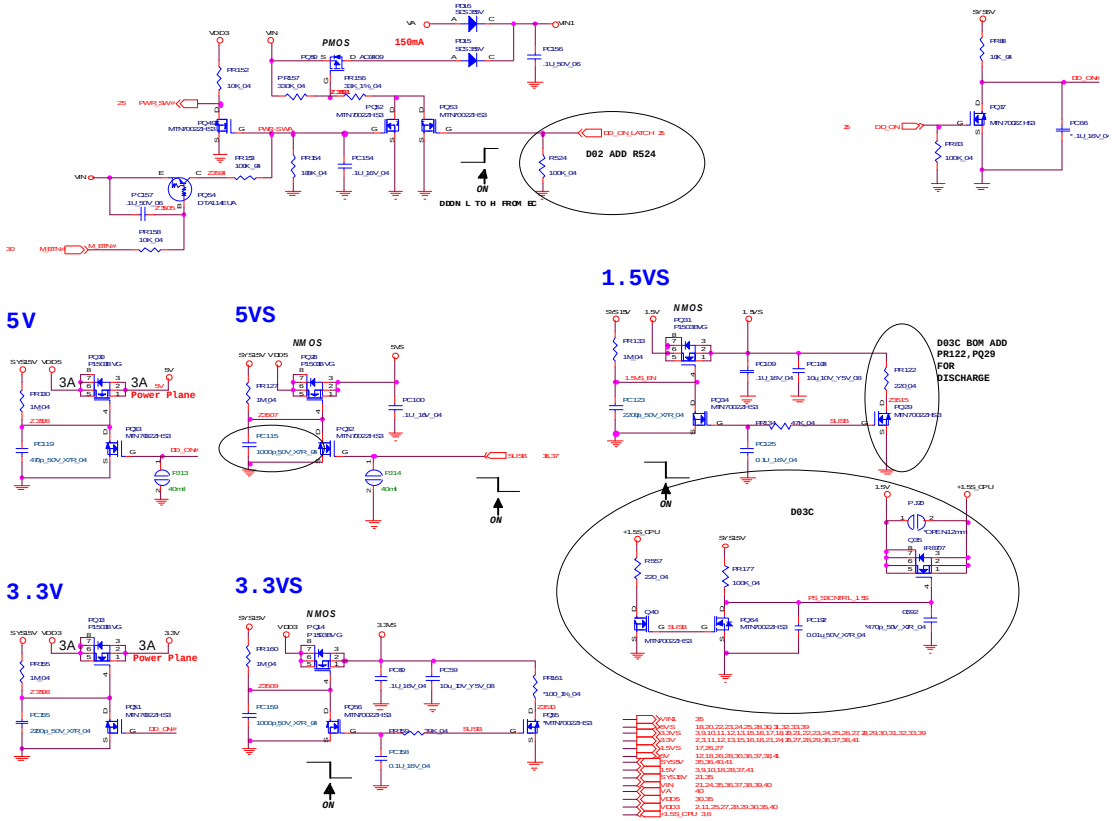
AMP-TPA6017,
Subwoofer



5V, 3.3V, 3.3VS, 5VS, 1.5VS



Sheet 34 of 57
5V, 3.3V, 3.3VS,
5VS, 1.5VS

VDD3, VDD5

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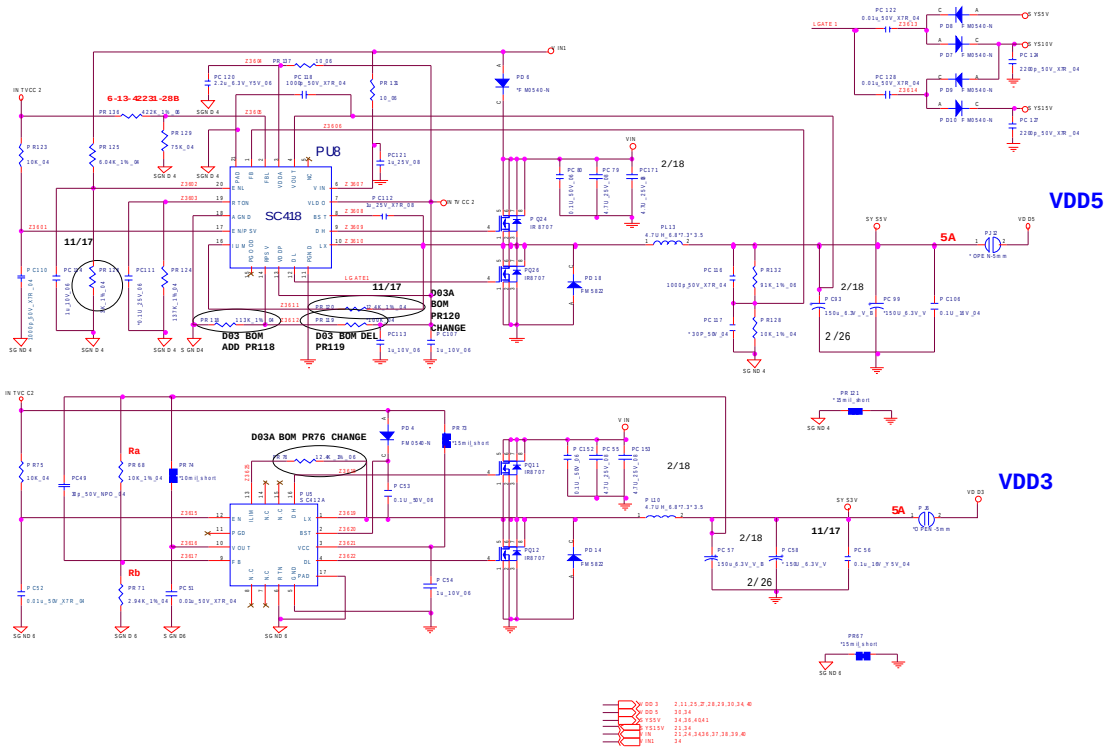
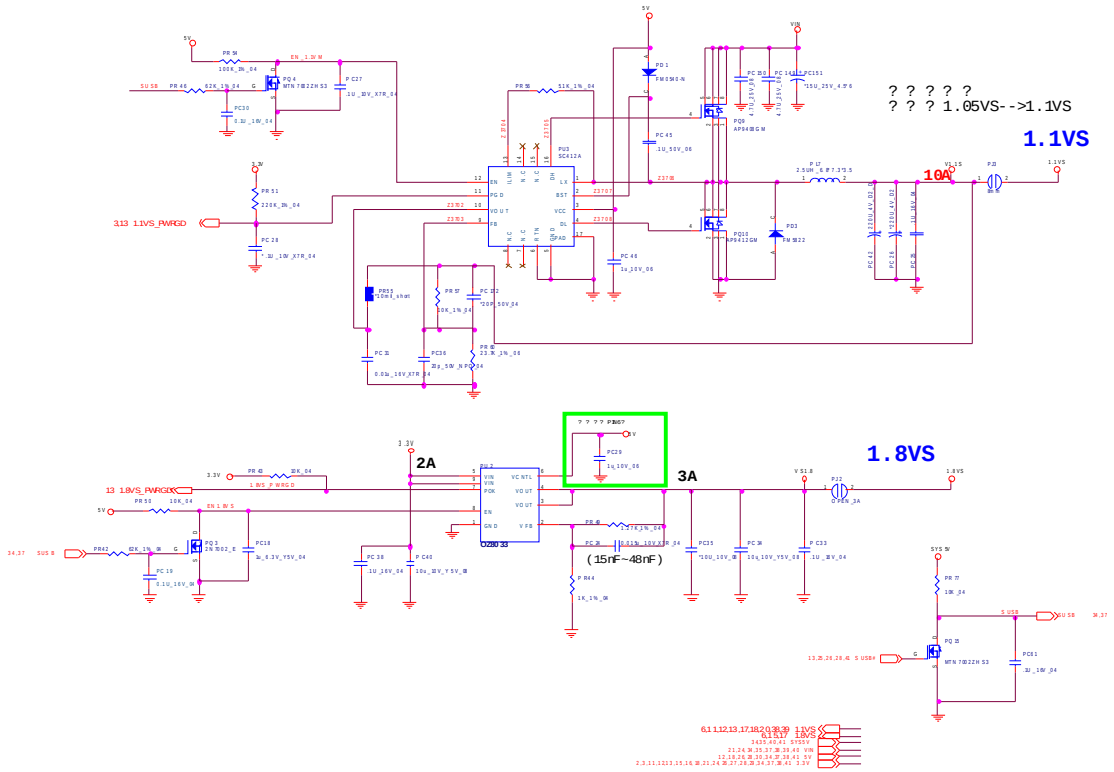
VDD3, VDD5



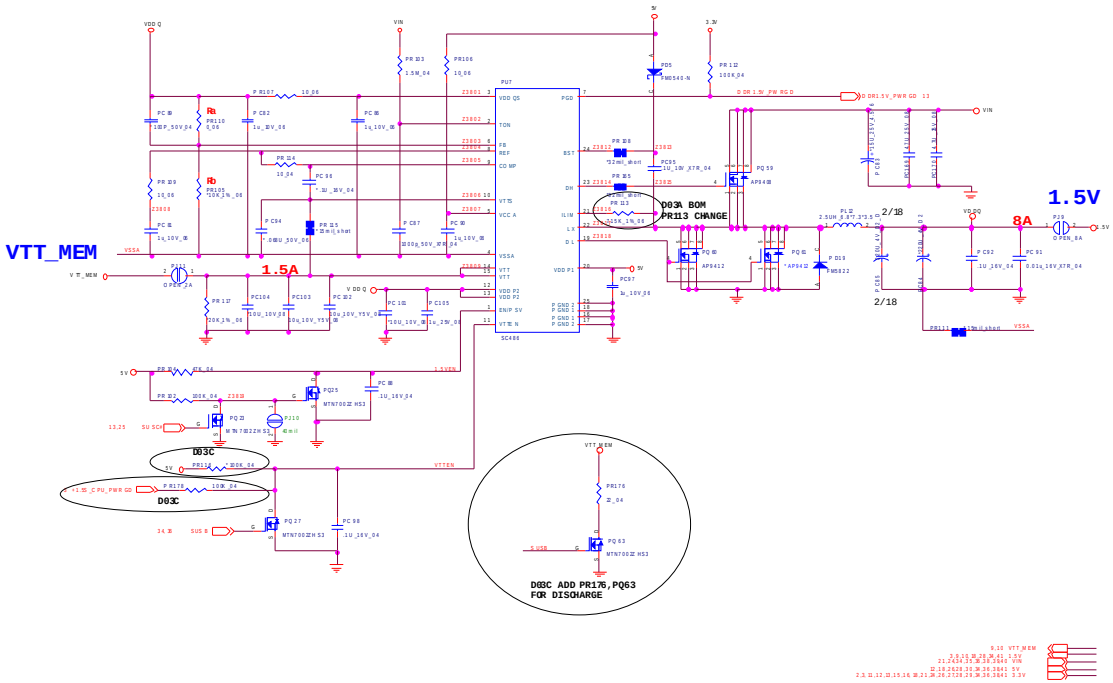
Power 1.8VS, 1.1VS



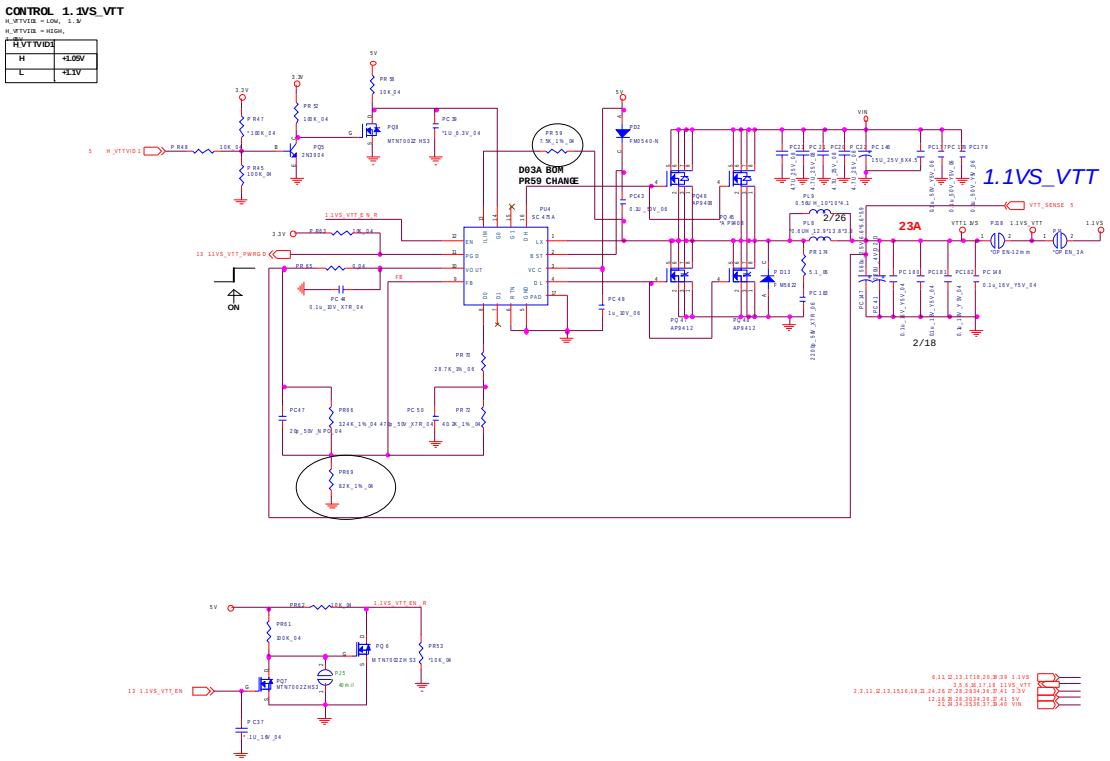
Sheet 36 of 57
Power 1.8VS, 1.1VS

Power 1.5V/0.75V

Sheet 37 of 57
Power 1.5V/0.75V



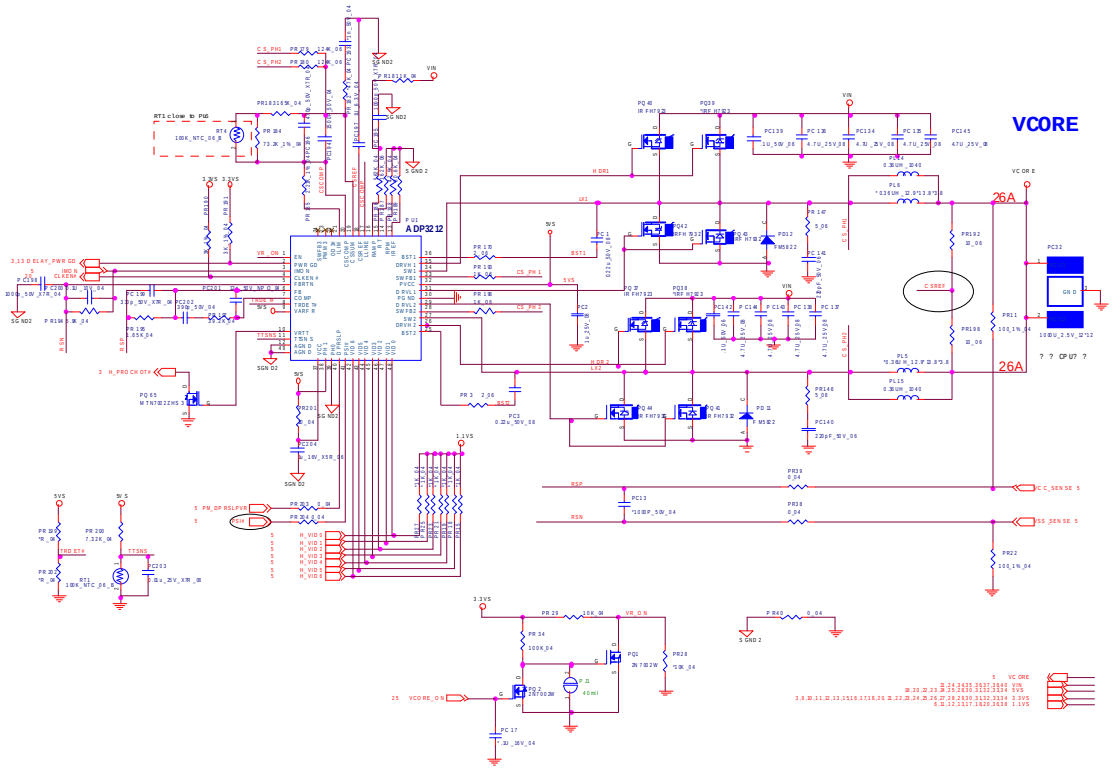
Power 1.1VS_VTT



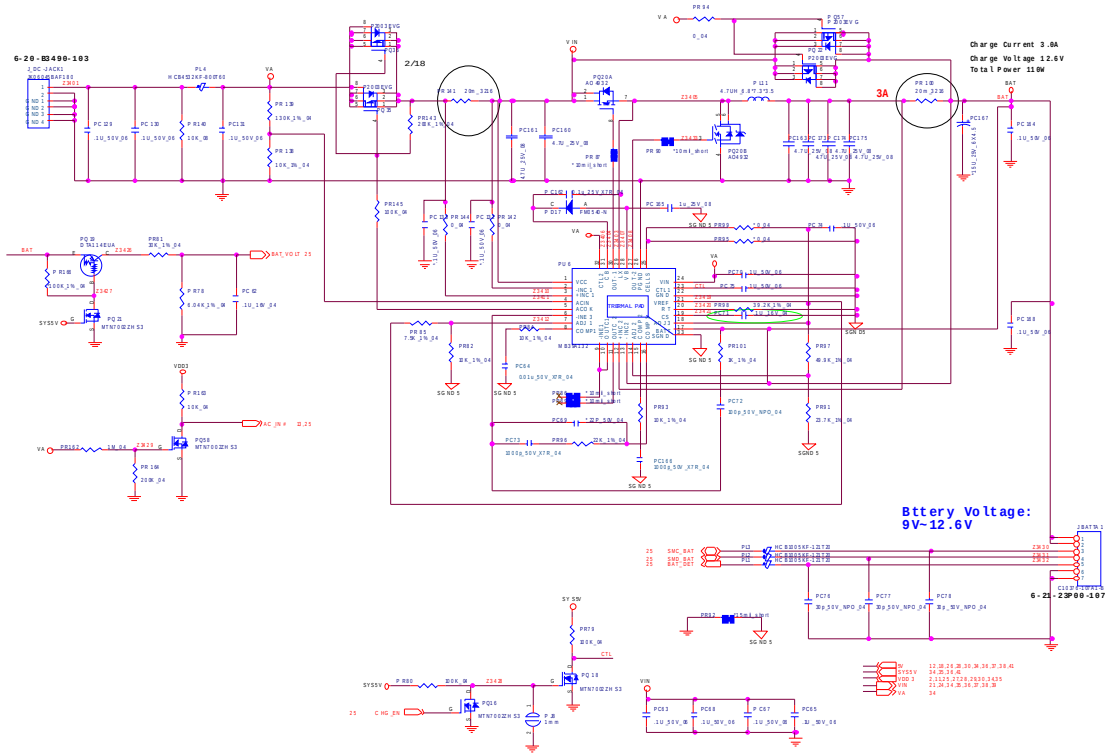
Sheet 38 of 57
Power 1.1VS_VTT

Power VCore

Sheet 39 of 57
Power VCore



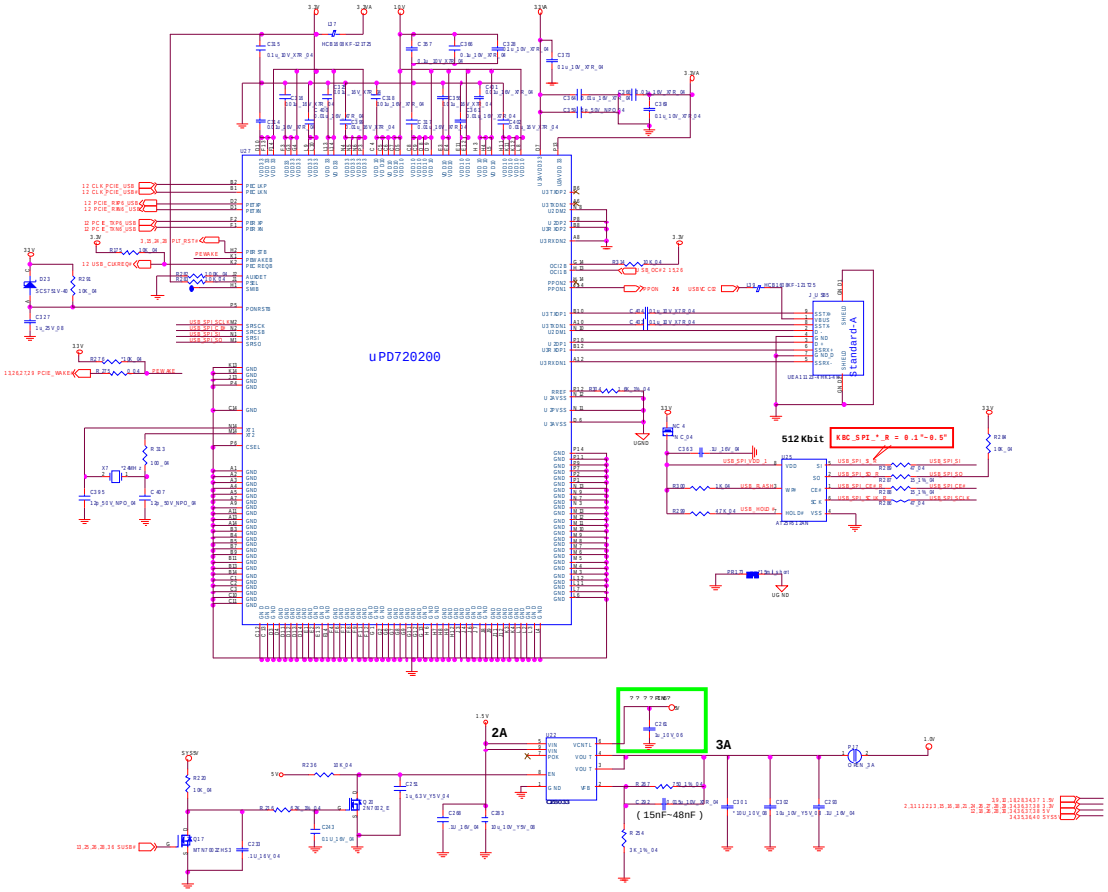
AC_In, Charger



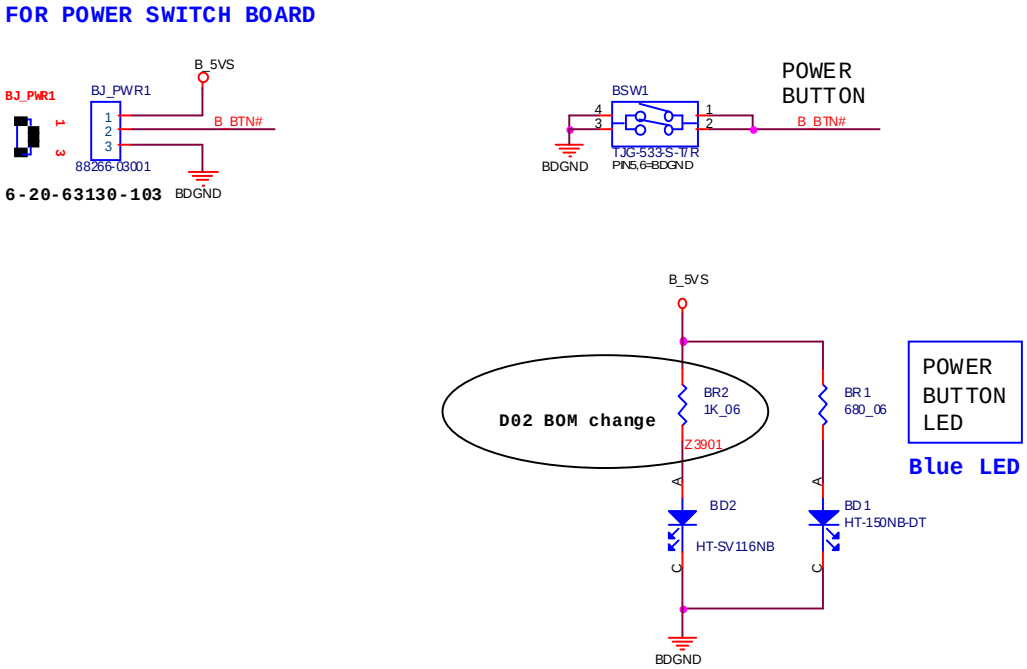
Sheet 40 of 57
AC_In, Charger

USB 3.0

Sheet 41 of 57
USB 3.0



Power Button Board



Sheet 42 of 57
Power Button
Board

LED Board

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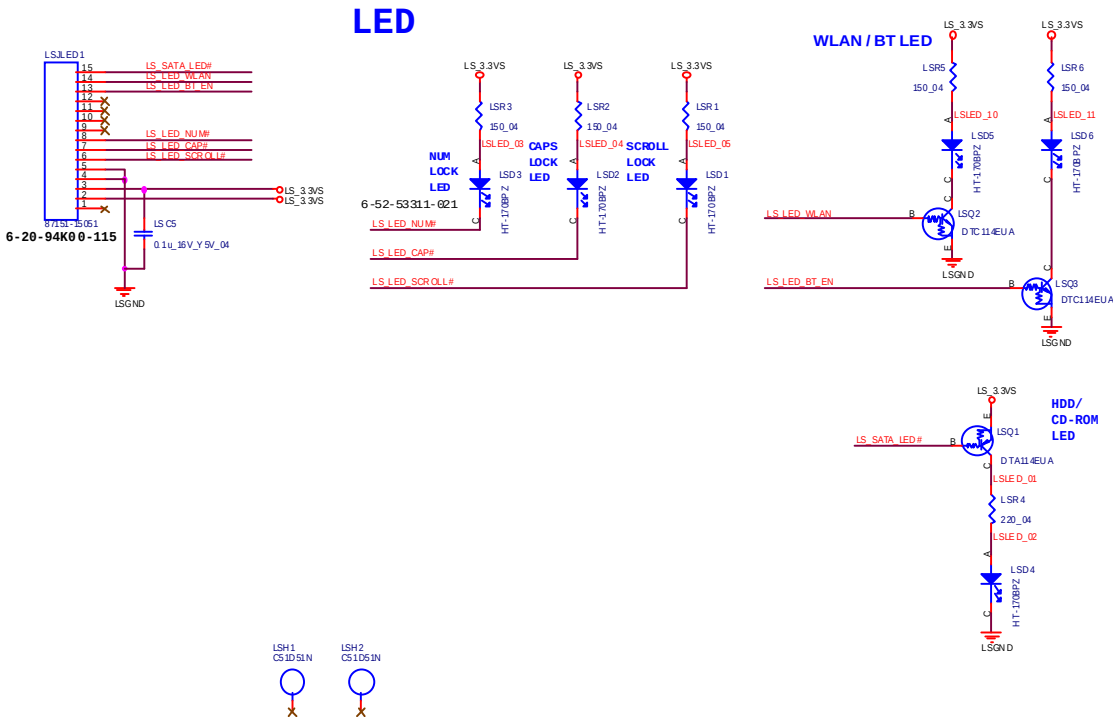
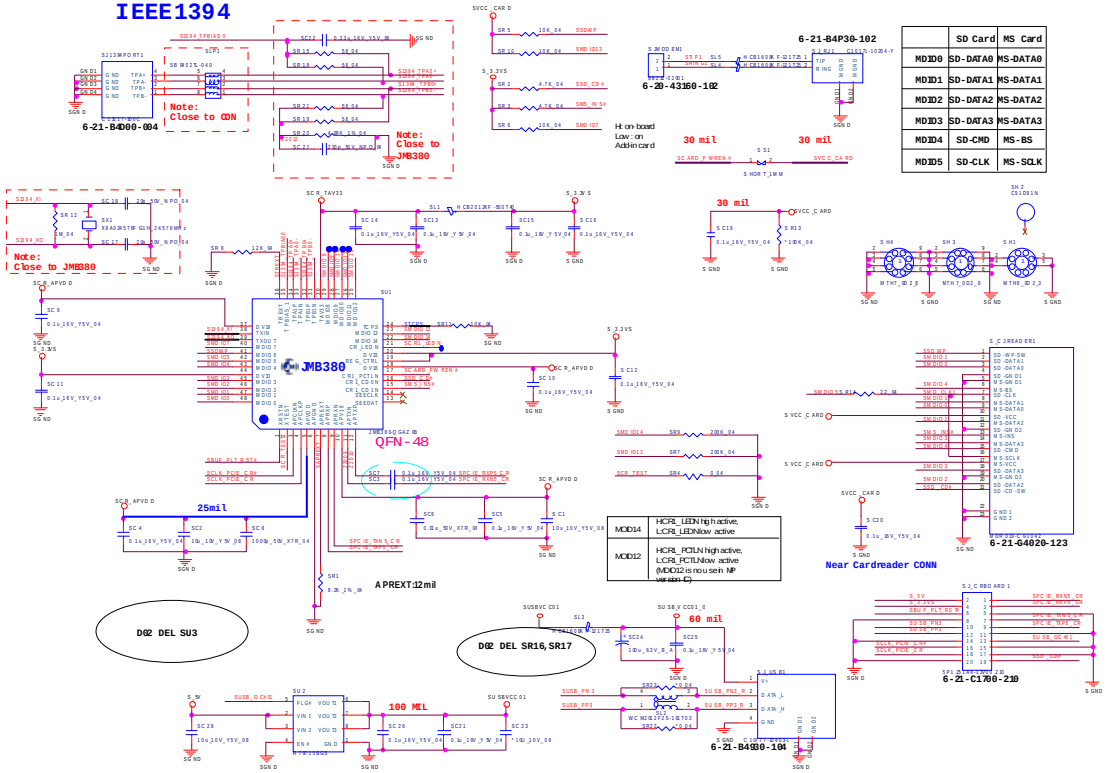
LED Board



Multi I/O Board



	SD Card	MS Card
MDID0	SD-DATA0	MS-DATA0
MDID1	SD-DATA1	MS-DATA1
MDID2	SD-DATA2	MS-DATA2
MDID3	SD-DATA3	MS-DATA3
MDID4	SD-CMD	MS-BS
MDID5	SD-CLK	MS-SCLK

Hi: on-board
Low : on Addin card

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Multi I/O Board

Touch Sensor Board

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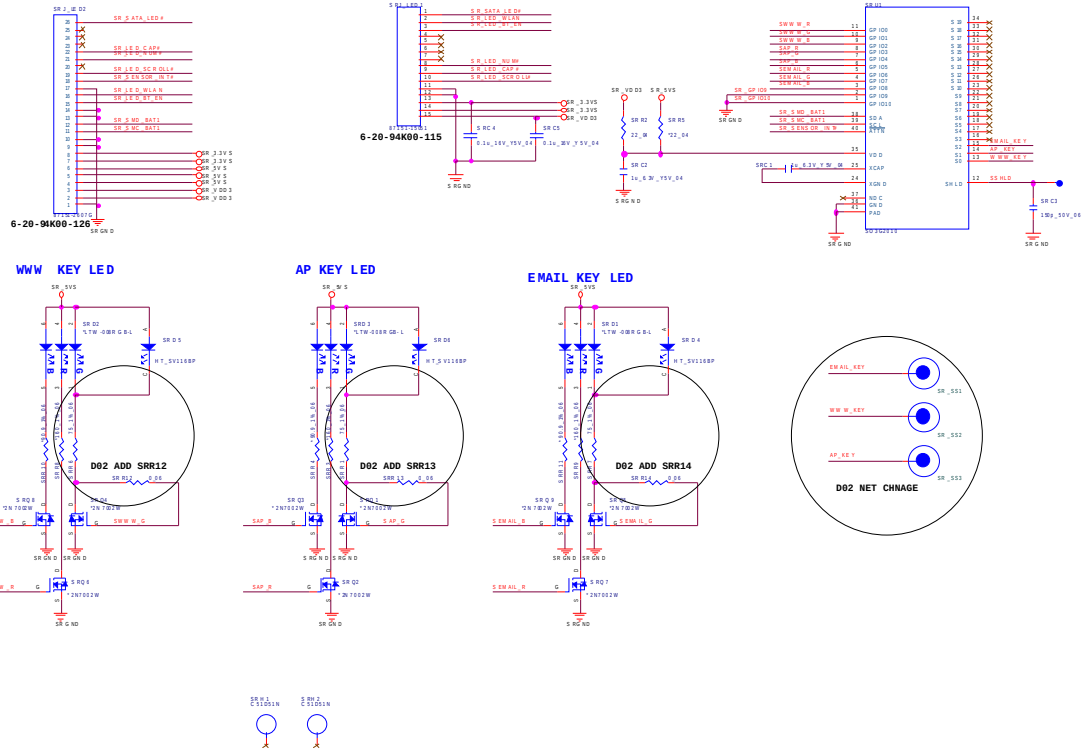
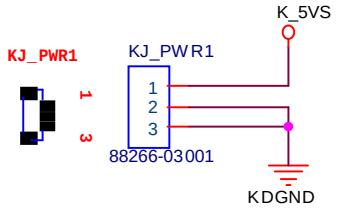
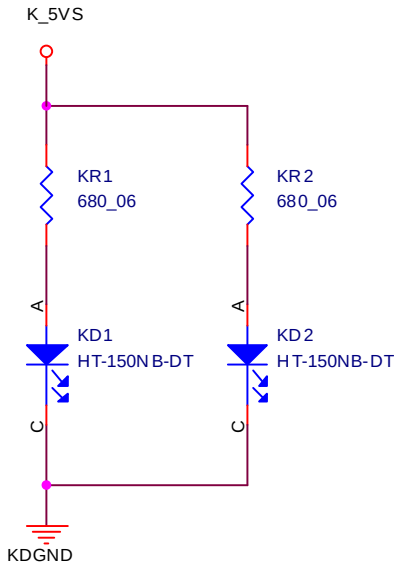
Touch Sensor Board



Left-LED Board

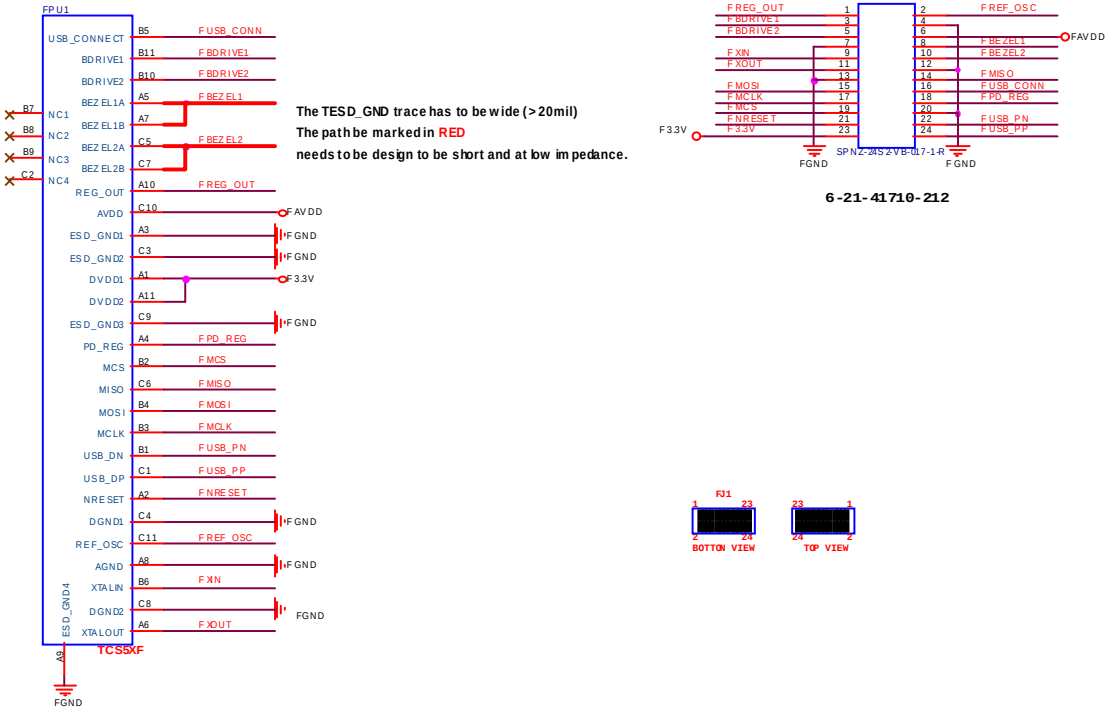




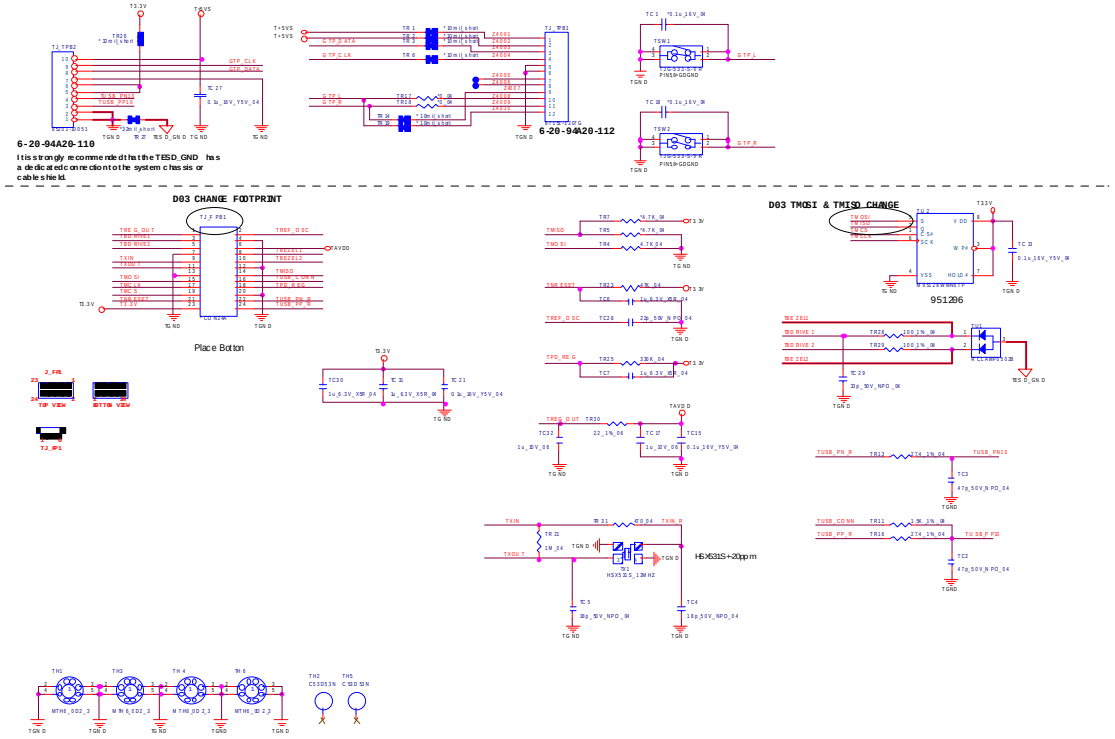
Sheet 46 of 57
Left- LED Board

Fingerprint Board

Sheet 47 of 57
Fingerprint Board



Click Board


6-20-94A20-110
It is strongly recommended that the TESD_GND has a dedicated connection to the system chassis or cable shield.
6-20-94A20-112
D03 CHANGE FOOTPRINT
Place Bottom
D03 TMOSI & TMISO CHANGE
951206
HSX531S+20ppm

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Click Board

W870CU Second HDD Board

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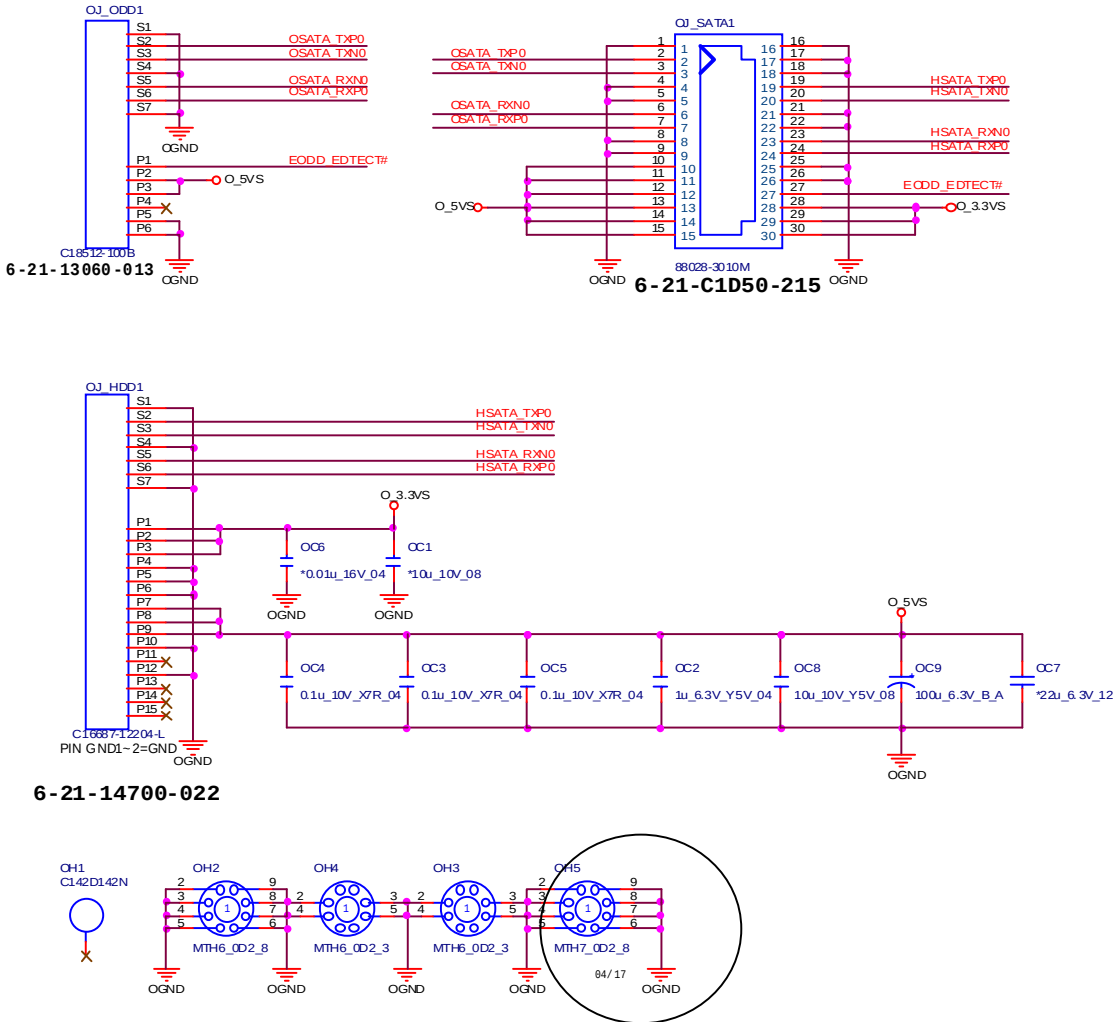
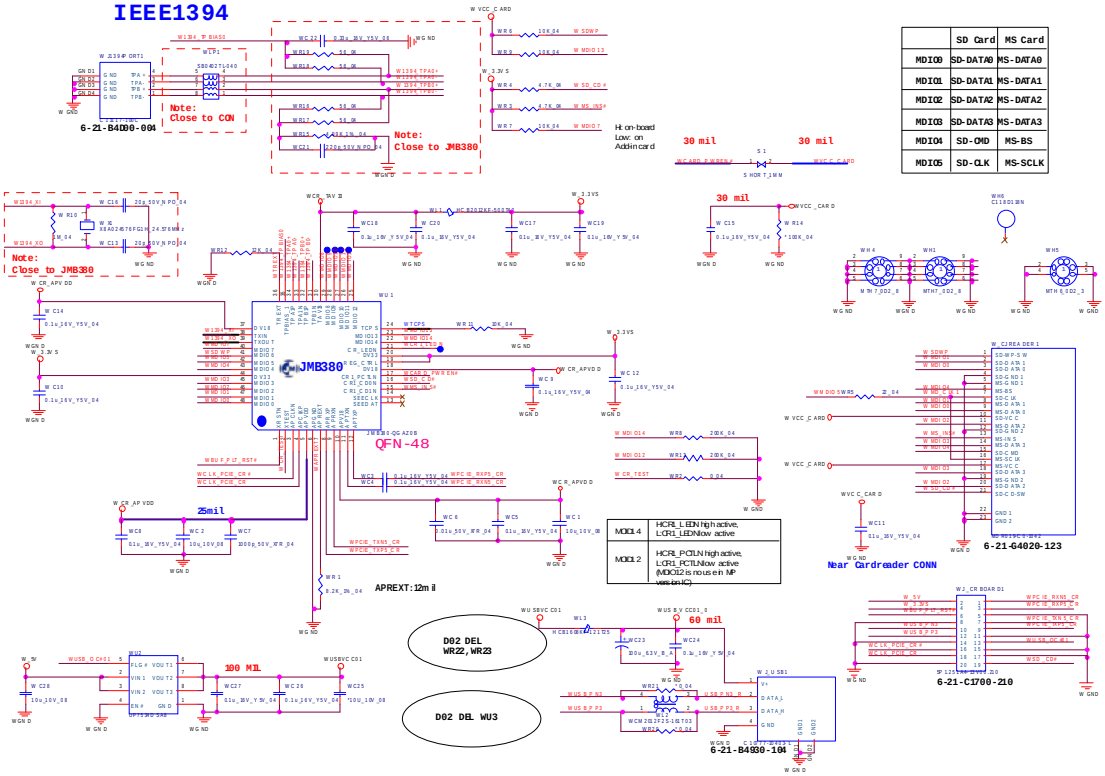
W870CU Second HDD Board



W870CU Multi I/O Board



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W870CU Multi I/O Board

W870CU CIR Board

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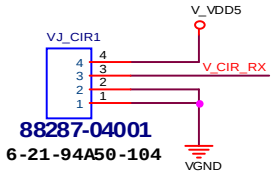
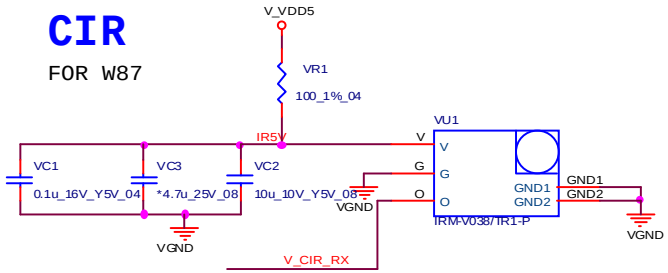
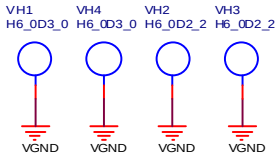
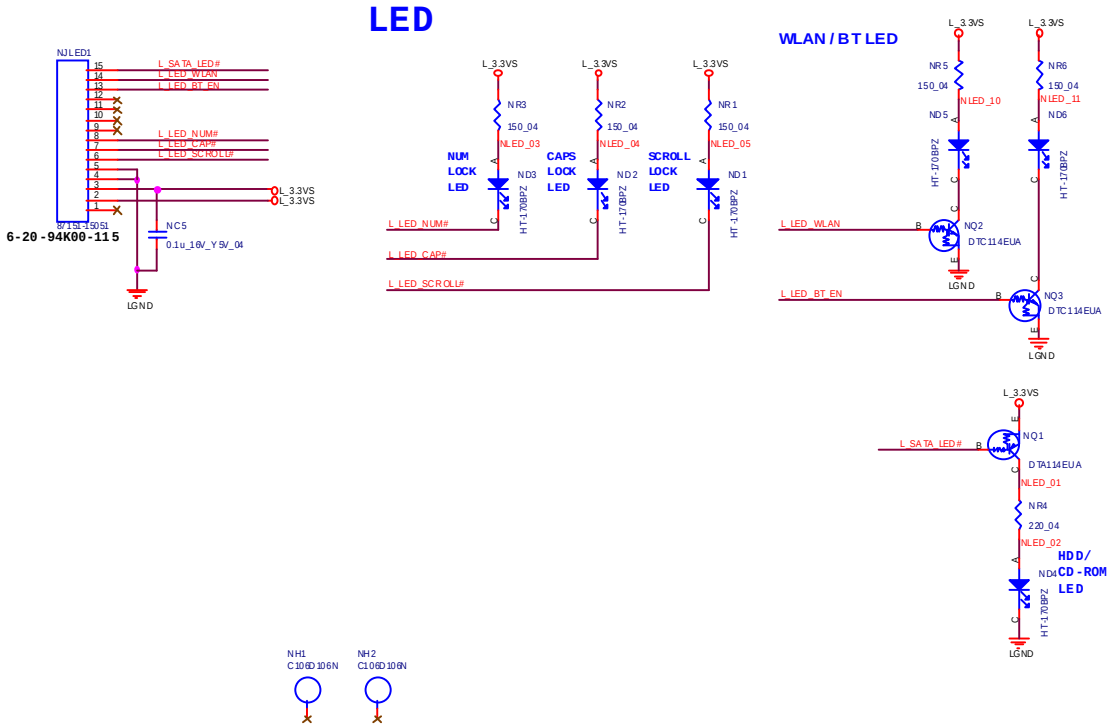
W870CU CIR Board







W870CU LED Board



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W870CU LED Board

W870CU RJ11 & TV Board

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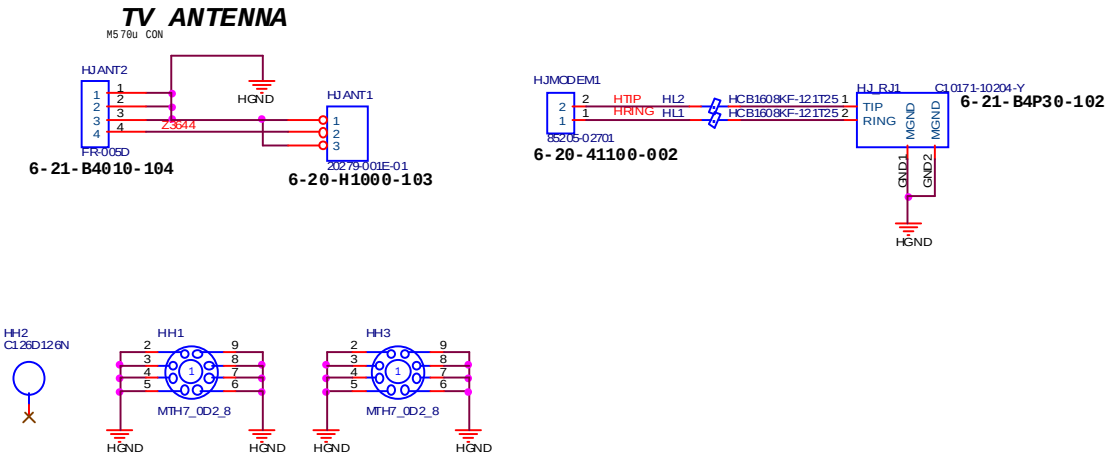
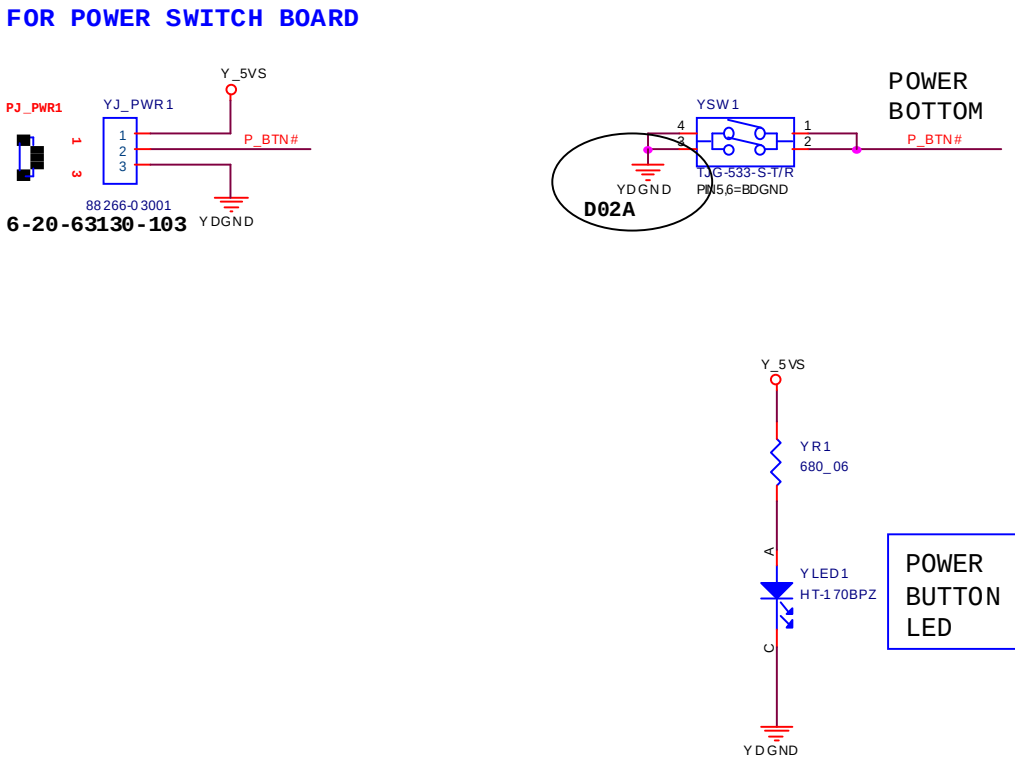
W870CU RJ11 & TV Board



W870CU Power Button Board



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W870CU Power
Button Board

W870CU Right-Logo Board

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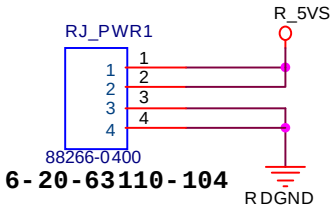
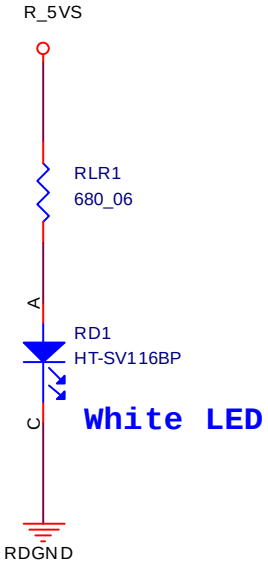
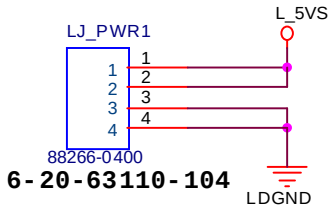
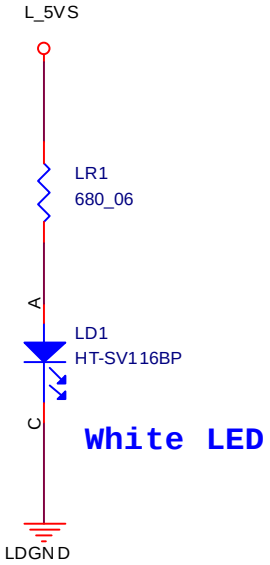
W870CU Right-Logo Board





W870CU Left-Logo Board





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W870CU Left-Logo Board

W870CU Touch Sensor Board

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W870CU Touch Sensor Board